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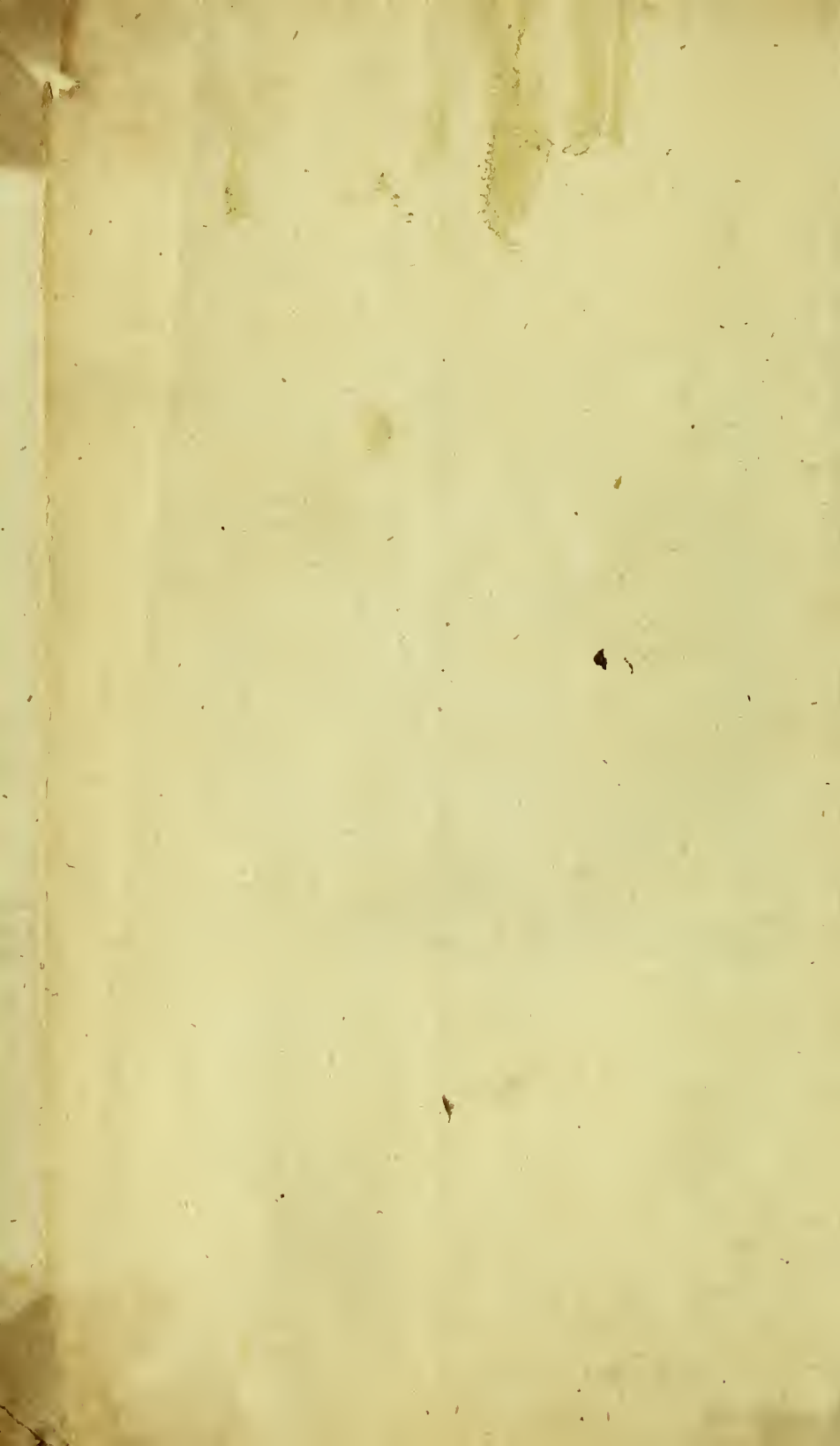
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T O T H E
R E A D E R.

TH E following work was originally published in German, by Doctor ZIMMERMANN, (first physician to his Majesty, at Hanover; member of the royal academy of sciences at Berlin, of the oeconomic society, at Berne, in Switzerland, &c.) whose merit is already well known in this country, by his Treatise on the Dyfentery, and his Essay on National Pride.

With respect to the present performance, the editor, in justice to Doctor Zimmermann, thinks it right to inform his readers, that the translation is not, in every place, strictly conformable to the original; many passages being abridged,

and some few omitted. The greater part of these omissions and alterations are explained and apologized for in the notes. All the notes to this work are by the editor; they are numerous, and many of them are long ones. If any of them should be thought tedious and unnecessary, his only apology is, in the goodness of his intentions. His great aim has been to render this a useful work to Gentlemen who devote themselves to the study of physic; and how well he has succeeded in his attempt, he most respectfully leaves to the candid and judicious reader to determine.



T A B L E

T A B L E

O F

C O N T E N T S.

V O L. I.

B O O K I.

C H A P. I.

Page

Of the different Ways in which we acquire Knowledge 1

C H A P. II.

Of false Experience 6

C H A P. III.

Of true Experience 28

B O O K

B O O K II.

Of Erudition, and its Influence on Experience 40

C H A P. I.

Of Erudition in general - - - 40

C H A P. II.

Of the Prejudices against Erudition - 44

C H A P. III.

Of the Advantages of Erudition - - 58

C H A P. IV.

Of the Characteristics of Medical Learning. 75

C H A P. V.

*Of the Influence which Erudition has on our
Experience* - - - - 91

B O O K III.

*Of the Genius for Observation, and the Influence
it has on Experience* = - - - 108

C H A P.

C O N T E N T S. vii

Page.

C H A P. I.

Of the Genius for Observation in general 108

C H A P. II.

Of the Impediments to the talent for Observation 136

C H A P. III.

Of the Utility of good Observations - 154

C H A P. IV.

*Of the Observation of the Phenomena in Diseases,
and of the Signs* - - - - 181

B O O K IV.

*Of the Observations of Signs, deduced from the
leading Phenomena of the Animal Oeconomy* 248

C H A P. I.

Of Signs derived from the Pulse - - 248

C H A P. II.

*Of Signs derived from the Respiration in Dis-
eases* = = = - - - 260

C H A P.

viii C O N T E N T S.

Page.

C H A P. III.

Of Signs derived from the Urine in Diseases. 271

C H A P. IV.

Of the Signs to be derived from the different Appearances and Positions of the Body; and likewise, from the State of the Mind - 287

C H A P. V.

Of the Influence of the Art of Observation on Experience - - - - - 330



T A B L E

A T R E A T I S E
O N
E X P E R I E N C E. &c.

B O O K I.
C H A P. I.

Of the different Ways in which we acquire Knowledge.

THAT the reader may the better understand the Ideas I have formed to myself on the subject of Experience, I will begin by pointing out to him the different ways in which we acquire knowledge.

We acquire knowledge by means of the senses, and by the reflections that arise within the mind, in consequence of impressions made on it by objects that have affected the senses. (a)

B

Amidst

(a) " Let us suppose the mind to be as white paper, void of
" all characters, without any ideas; how comes it to be fur-
" nished? whence comes it by that vast store, which the busy
" and boundless fancy of man has painted on it, with an almost
" endless

Amidst the great number of objects which the vast theatre of the world affords us, the senses embrace as many as they possibly can, and confide the impressions made by them to the memory. This, then, is the source of the simple ideas with which the senses supply us.

It is the business of the mind to compare, arrange, and connect together, these simple ideas; to find out the affinity they have to each other, and to form from them complex ideas. From these are to be deduced certain principles from which conclusions are to be drawn. These conclusions either flow naturally from simple and certain principles, or, are the consequences of many compound principles, both certain and uncertain; and in this case, the united faculties of the mind may be said to act.

The Sciences differ more from each other by the variety of these principles, than by the diversity of their objects. Some of their principles are clear, simple and certain; and finding all the avenues to the mind open, easily enter into it, and bring conviction

“ endless variety? whence has it all the materials of reason and
 “ knowledge? To this I answer in one word, from *Experience*: In
 “ that, all our knowledge is founded; and from that it ultimately
 “ derives itself. Our observation employed either about external,
 “ sensible objects; or about the internal operations of our minds,
 “ perceived and reflected on by ourselves, is that which supplies
 “ our understandings with all the materials of thinking. These
 “ two are the fountains of knowledge, from whence all the
 “ ideas we have, or can naturally have, do spring. *Locke's Essay*
 “ *concerning Human Understanding*. Book II. Chap. 1.

along

along with them. Others there are, which require to be more deeply examined, and which afford no light to the understanding, but by the favor of Experience, by whose means alone we can hope to comprehend them. Persuasion, however, does not accompany these as it does the others, because they are not so easy to be understood. The knowledge that flows from clear, simple and certain principles, forms a part of the mathematics, there being nothing so certain as the pure mathematics. That which is derived from compound principles, that are in part certain, and in part uncertain, more especially comprehends moral philosophy, the art of government, the art of war, and the healing art.

Neither Physic, nor any of the other sciences we mentioned with it can be so certain as the mathematics, there being usually some doubts remaining after all the proofs that can be brought to remove them. physic, seems, above all others, to require a very liberal, active and penetrating genius, because the Physician, being often obliged to confine himself to simple probabilities, will be unable to trace them to their highest degree, without an extreme share of penetration; and by being almost constantly exposed to the application of principles, which cannot be submitted to the evidence of his senses, he must necessarily become an inventor in the practice of his art.

Simple ideas form the basis of each particular Science. The industry of the multitude is employed in drawing these from the moral and physical world, and delivers them up in this state to the philosopher, who examines them with a careful and penetrating eye;

and, selecting what are useful from the mass, preserves these, and rejects the rest.

This fund of simple ideas can never be too abundant. We owe much, both to him who collects every thing at random, without carrying his views any farther; and to him, who, being more intelligent, culls with taste only, the choicest objects that present themselves to him. We are likewise much indebted to men of great genius, who, like Democritus, Aristotle and Bacon, consider Nature in all her parts, and thus give before-hand to posterity, the matter which is to become the fertile source of general ideas, and the most enlightened truths.

In proportion, as the Sciences become more extended, every thing we know in Nature, will find its true destination. Posterity, will in this respect, derive much from the writings of our Academies. Every thing that is useful will be extracted, and men will arrange the whole in the way, that is likely to be the most useful to them. There will then be fewer books, but the stock of ideas will be increased. Why should not such an occupation be even now the employment of those who have leisure to undertake it, and talents to execute it? Such extracts can never be the works of ignorance.

It is philosophy alone, that can enable us to profit from the perceptions of our senses, and extend the limits of our understanding; because true philosophy is the art of directing the reason in all her enquiries, and enables us to combine and arrange the ideas we have acquired thro' the medium of our senses.

The

The whole of my work is, therefore, written with a view to ascertain a certain chain of principles, the knowledge and application of which, constitute what I call EXPERIENCE. But there being many rules, which, although of immediate utility, and even of indispensable necessity, may be liable to become either of no use, or difficult to be understood, for want of examples; I will, therefore, not only make the reader see what is meant by Experience in Physic, but will conduct him to it in the most natural manner.



C H A P. II.

Of false Experience.

I N general, Experience is considered as the simple produce of the senses. The understanding seems to come in for so small a share, that every thing that is intellectual in it, is regarded as having as much of *materiality* as the perceptions of the senses. This is what I call *false experience*, because it is either founded on observations that are false in themselves, or improperly reflected on and of course insufficient; or, that are erroneously deduced from principles that are in themselves not well founded.

Commonly too, the name of EXPERIENCE is given to that knowledge, which is acquired by the simple reiterated intuition of the same object. Supposing this principle to be well founded, it is only necessary to have travelled much, to acquire the greatest experience in a knowledge of the world. An aged officer will have all the Experience that is possible in the art of war; and an old nurse will be preferable to the most experienced physician. On the same grounds, the physician who has seen the greatest number of patients will be the most instructed: and, indeed, the people always prefer such a one. The multitude, without concerning themselves about the true character of Experience,
readily

readily give that confidence to the old woman and the old doctor, which is due only to long and true Experience. They inquire not, whether he is a man of learning, and pénétration, and genius; if he has gray hairs, it is sufficient. These inconsiderate decisions, are derived wholly from the idea, which the less enlightened part of men form of old age. They suppose, that an old man has thought more than a young one, because he has seen more. It is on this account, that we so often see old men inconsiderately revered, who are unworthy of the least esteem; and that the most striking, and even brilliant actions sometimes lose all their value:—*He is a young man*, they say.

There is only one prerogative which the young man of merit is unable to dispute with ignorance in gray hairs, and that is the number of years: and yet, alas! we see the idea of Experience attached to this prerogative, piteous as it is; and the old man is always enabled by it to keep the young one at a distance, like an old and sapless tree, which by its withered branches prevents the young and promising plant from rising.

This prejudice is the more injurious to the young man, because when compared with the old one, he continues always to be young. I have often seen people of weak minds, who constantly considered a young man of merit, as a young man, notwithstanding his accomplishments and capacity, merely because they saw him come into the world. They always spoke of him in the same severe and imposing tone, even although he might be much superior to them in station

tion as well as in talents. Methinks I hear the nurse of a General covered with wounds, crying out, 'Ay, ' *I have often danced him in my arms.*'

Age certainly affords us an opportunity of enlarging our understanding, but every one is not disposed to do this ; nor is every capacity susceptible of it. The old age of a physician who is respectable for his merit, is an honourable old age. Glory follows all his steps. The younger members of the profession give him all their respect and esteem. They call him their father, their Mentor. He is their only guide in the obscurity which frequently surrounds them. But ancient days, after a life of little estimation, or rather, the old age of a weak brain, is ignominy. Truly, can seventy years of stupidity, ever render a man respectable?— An old physician without merit, in my eyes, appears only as a man who is become once more a child. All his powers lie in his obstinacy. These stupid old men do not consider that even at their birth, they were seventy or eighty years old.

It will be perceived, therefore, that *false experience* is nothing more than a blind routine, directed by no law whatever. This routine is confined, as it were, to a circle of certain actions, and to the repetition of certain maxims, the nature and reason of which are equally unknown. In a word, a physician who practices by routine, exercises an art of which he knows not the principles, and he is the more careless about them, as the people, who employ him, generally suppose them to be as useless as he does.

By

By the terms *people* or *vulgar*, I shall imply through the whole of this work, those persons, who, giving themselves but little concern about what has been written or said on matters of Science, in different ages, and incapable at the same time, of comprehending the discoveries and truths that are offered to them : see every thing through a false or obscure medium ; and thus are led to consider routine as the basis of human knowledge, and, of course, to mistake it for true genius.

I may be permitted in a work like this, to offer some reflections on this abuse. Every reflection is well placed, when it is interesting in itself, and, at the same time, connected with the chain of fundamental propositions that compose the work. At any rate, it seems laudable to oppose and detect abuse, and especially when it seems liable to exert its influence on persons of every station.

It is on this blind routine that the vulgar usually found their system of education. What unhappy consequences may not be expected from the conduct of masters, who, in conformity to a received practice, and without extending their inquiries farther, aim only at the rendering the heads of their pupils as stupid as their own. Instead of unfolding the understanding of their scholars, by teaching them to fix their attention on every thing that surrounds them, they fill their minds with a thousand abstract ideas at once,—ideas, which neither the master nor the scholars will ever be able to comprehend as they ought to do.—It cannot be thought strange, therefore, if the stumbling-blocks which the student encounters at

every step, should limit his understanding within very narrow bounds, and thus force him, as it were, into a round of servile imitation, as appearing to be the shortest and the easiest of acquirement. And yet this is an abuse into which almost all our masters fall, and all of them give their reasons for it, either good or bad. Some of them are of opinion, that we ought to see only with the eyes of the most remote ages. Those ancients, say they, were respectable men in every way, and we must, therefore, adopt their methods. Others, who are incapable of weighing the true merit of the ancients, and too conceited to acknowledge any degree of learning in their contemporaries, are like a pilot without a compass, whose whole resource depends on the first star he may happen to spy out, and thus steering by chance, he may at last, perhaps, get into harbour: but how will he get there? Why, in the way that these same masters do; by following the common track, without reflecting on the rocks he was exposed to in his passage, and which would certainly have proved fatal to him, had he chanced to have touched them. Some others there are, and perhaps still more blameable, who are too little enlightened to be enabled even to doubt with any method. The moment they have opened a few books, they fancy themselves on a footing with the greatest men. They are soon fatiated with instruction, and they found their experience on a collection they make, tho' not always without disdain, from the precepts they imagine to be the best conceived; and they do not perceive, that in doing this, they proceed more blindly than they would do, were they to follow the ordinary routine.—Such, however, is too often the apparatus with which a disciple appears before the
public,

public, and under the eye of his master, who is not a little proud of having filled his head with these precepts, and who does not foresee that, with this borrowed learning, the scholar will not fail to be overturned by the least difficulty that shall present itself.—Can we be surprized, therefore, if children or young persons instructed in this way, should become only very moderate subjects in a more advanced age, after having afforded the most promising hopes; and yet this is what we see happen every day, and what must necessarily be expected to happen, whilst so improper a system of education continues to be adopted.

This blind attachment to a routine, every day deprives Society of the greatest advantage she has a right to expect from her members. It is a melancholy truth, that men educated in this way, can never be capable of knowing, as they ought to do, the physical and moral man. This acquirement, which may be considered as the common principle of happiness in Society, and as the first and most noble branch of our knowledge, is always disguised and misunderstood by these narrow-minded masters, although it is so essential to the forming a good citizen,

Physicians seem to be more interested in the acquisition of this knowledge, than any of the other classes of civil life. The passions come in for so great a share in diseases, that it would seem criminal in a physician to enter into practice, without having particularly applied himself to the study of man.

There are people who imagine that nothing is so easy to acquire as this sublime knowledge. But where do they seek for it? In the conversation and company of persons who have, perhaps, never been open to reflection, or who are filled with prejudices, and who condemn or approve, from principles they imbibed in their youth. It is, nevertheless, people of this stamp, who, in a more advanced age, are every day vaunting their experience, and who do not consider, that we might say to them, as a young Soldier did one day to an old Captain: "*The only advantage you have over me, is, in the having worn out more shoes.*"

In good truth, we every day see, how much this pretended experience is found to be barren and impotent; and, indeed, this must necessarily happen with those who have studied neither Man nor Nature.

Agriculture was for a long time languishing in the hands of ignorant people, who were slaves to a routine. It cannot be expected, that the peasant should of himself examine the mysteries of nature, without being led to them by the Philosopher. Usually, he has only enough of understanding to plough and to sow and to reap: He seldom has reason enough to listen to advice. The power of prejudice is so great, that the most miserable peasant feels a pleasure in enjoying the full scope of his obstinacy. If an intelligent cultivator gathers more corn in one year, than this peasant does in ten, he exclaims, "*I should never have thought this;*" but still he trudges on as usual, and religiously adheres to the practices of his father and

and grandfather, without once inquiring, whether by adopting his neighbour's methods, he might not procure a similar crop. The Minorquins; instead of pruning their trees, as they saw the English do who came amongst them, contented themselves with saying, that Providence best knew how trees ought to grow. Within these few years, however, a laudable spirit for improvement seems to have exerted itself, and societies have been established in different parts of Europe, which will soon, we hope, entirely remove the veil of ignorance and superstition from Agriculture. We will not inquire here, whether it was corn or iron; or in other words, whether it was hunger or strength that first began to civilize men. But we begin now to be convinced, that, with a little portion of land and the implements of husbandry, we are enabled to live more at our ease than those vast empires do, whose fleets return home freighted with the riches of the new world.

It is with the Artist as with the Peasant. He willingly confines himself to that which he derives from his predecessors, without wishing to extend his knowledge any farther. Without any other art or address than mere habit, he constantly exercises his hands at the same work in the same manner. As he is ignorant of the inventions of others, he seeks for no new lights; that which he knows, is, in his own opinion, sufficient. It is not the shortest, but the best known route that he seeks after, although it should be the longest. The whole of his knowledge lies in habit. There happened not long ago, at Paris, sufficient proofs of what I am now advancing. Of the men of genius, who united to compose the great work, which
does

does so much honour to the French nation, there were several who undertook to visit the shops of different artists, and interrogate them on the subject of their tools and manner of working. These gentlemen were surprized to find, that of the many artists they visited in this way, hardly twelve were able to give any clear account of these matters. They met with several who knew not even the names of the tools they had been using during forty years.—Rousseau calls these people machines, which serve only to put another in motion.

What shall I say here of the influence of habit on the art of Government; an art, by the bye, that is more eccentric if possible, than the human mind? Time, which insensibly changes the genius and the manners of men, would seem likewise to allow occasional modifications in the fundamental laws of a state. Do not the continual revolutions, which produce so many changes in civil society, afford sufficient reasons for introducing, at least to a certain degree, some alterations in the mode of government? If we throw our eyes over the different states of Europe, do we not observe sufficient proofs of the necessity of such changes? If men were always of the same way of thinking, invariable laws would become plausible, and even necessary: But the instability of the human mind proves but too clearly, that the system of Government ought to vary as much as Man varies within himself.

I do not mean to assert, however, that the art of Politics has no determinate principles. It is always the advantage of a state, and of course, the welfare of each

each individual, which ought to be its leading objects. There is, indeed, no art, the principles and rules of which are more simple than of this, if the spirit of government is understood as it ought to be.

Were ambition once rooted out, politics would soon become an art that would render the sovereign, the magistrates and the people happy. The greater part of politicians suppose themselves capable of foreseeing and executing every thing, when they have proposed to themselves as a model, such or such a great man. But they do this, without reflecting that they are no longer, perhaps, in the same circumstances, and that to imitate such a great man, they ought, necessarily, to possess his genius and capacity. Without these, they only expose their temerity. The one is like a great painter, who conveys his ideas with the most exact and lively expressions; whilst his imitators do, at the most, give the outlines of his work. It was, without doubt, to persons of this stamp, that Socrates and Bolingbroke alluded, when they observed, that of all the sciences, that of government seemed to require the least share of application and knowledge.

The art of war, intended as it is to defend the rights of men, is, in the eyes of many people, only a matter of imitation.—They fancy, that with courage, and moderate abilities, it is easy to become a true warrior. We seldom see even an officer, who suspects that his art supposes many parts of knowledge necessarily connected with erudition. There are but few who think, with the Chevalier Folard, that the art of war is only a trade with the generality of men, and a very refined science in the hands of men of genius.

nius. If the vulgar prejudice were well founded, a lieutenant who can shew ten scars, or a drummer who has seen ten campaigns; would be men of consummate experience.

But let us pass on to physic. This art, in the opinion of the multitude, consists in possessing a fuitable receipt for each infirmity to which we are liable: This supposition confounds the physician with the empiric. An empiric in physic, is one, who without knowing or considering the operations of nature, or without inquiring into the causes and signs of a disease and its indications, or the opinions and observations of different ages concerning it, simply asks its name, and then administers his drugs at random, or one after the other. The experience of such a man must be always false, because he practices an art of which he knows not the principles, and follows the receipts of others, without inquiring for what reason. In the first ages of physic, it was necessary to see diseases before they could be examined and their causes dived into. This is the reason too, why empirics desire to see the sick, but at the same time, are neither willing to inquire into what they see, nor to know what they do. They reject all information, oppose all principles, and suppose themselves to be instructed, as it were, by heavenly inspiration, in all that is worthy of being known. These people, it is true, are susceptible of certain combinations; but their combinations embrace only the first ideas of things, or rather, only the perceptions of the senses. Their logic does not seem to extend beyond instinct.

It is by no means difficult to ascertain the causes of the different abuses of which we have spoken hitherto: The first and the principal of them, may be ascribed to the gross idea men in general have of Experience. An ingenious gentleman has very properly observed, that it is impossible to conceive in what direction, and with what rapidity, the arm must be moved, to hit a mark with a stone at a certain distance. This address can only be acquired by Experience. It is certain, that by use one learns how to manage a gun, a hammer, or an ax; but it is equally certain, that it would be absurd to expect from use alone, a skilful general; or a Palladio, from an old workman.

The mechanical trades may be learnt by habit; but there are means of supplying an artist with ideas which habit will never give him. He works with propriety, but without knowing the principles of his art; he, therefore, is deficient in an infinite number of resources, with which the philosopher only can supply him. It is from a want of reflecting properly on this genius of arts and trades, that the vulgar confound the physician with the ordinary artist. The one professes a science that is purely intellectual; the other, an adroitness that lies wholly in the fingers.

The hatred conceived against every thing that has the air of novelty or innovation, makes us love and adhere to ancient methods. Were we to believe those old men, who employ themselves wholly in praising the times past, there was not an ignorant man in their day: unhappily for them, however, they are the living proofs of the falsity

of their assertion. May I be permitted to say here, that I know many people, who with heads that are well framed, do not read a book; and this merely because it is a new one. It is even sufficient with these persons to speak of a new work with some esteem, to make them conceive that it is an ignorant one; and to endeavour to make them think differently on any subject from what they have been accustomed to do, would be to risk the being hated by them, as much as the English were by the Irish formerly, because they prohibited them from harnessing their horses by the tails, according to ancient usage.

Long established custom is pleasing to the narrow minded, the idle, and the indolent, because it is not difficult to do what one has always seen done. It is likewise much easier to establish three principles, to determine the nature of diseases, as the ancient Methodists did, and to oppose only three formulæ to these diseases; or to reject all rules whatever, as the empirics do, than it is to dive deeply into the healing art. What can be more concise, or more easy, than to confine ourselves to one book, or to one remedy, and to reprobate all the knowledge that is not in that work, or all the remedies which do not agree with that we have adopted.

It is certainly much easier, to gain by a servile complaisance, the vile applauses of the populace; or to procure praise and protection from friends who have been won by flattery; or to rob the man of true merit of his reputation, by circulating idle reports to his disadvantage, which the people are but too readily disposed to listen to, and even to publish, and to add
to;

to ; all this, I say, is much easier than it is to rise by true merit. The physicians in Chili blow around the beds of their patients, to drive away diseases.—The people there think, that physic consists wholly in this wind, and their doctors would take it very ill of any body who should attempt to make the method of cure more difficult. They think they know enough, when they know how to blow.

The multitude are attached to a blind routine, because all ignorant people approve of it. It is condemned only by those physicians, who are men of sense. In general, men are pleased at meeting with their own way of thinking in others. It has been remarked, long before our time, that it is always self-love that decides either the hatred or the affection, the reverence or the contempt we entertain for others ; and that it is likewise by the same principles, we judge of their merit. A man of sense is sure to find an enemy, if he does not endeavour to flatter his self-love : and he is at the same time despised by the ignorant multitude, because he condemns, or does not adopt their errors and prejudices ; and because the truth, and the good and the learned things he approves, are exactly those which are despised by the vulgar. The more a physician is endued with genius and penetration, the more is he exposed to the shafts of ignorance. Agathias describes to us, in his history, a very ignorant empiric, who at the same time, talked in the most daring manner on subjects which he did not at all comprehend. This Uranius went in the suite of an ambassador, to Constantinople, and there he pleased the King Cosroes so much, that this prince, who had invited to his court, and afterwards sent back, the

most celebrated philosophers of Greece, said he had never met with so sensible and discerning a man as Uranius. The motives to this approbation, adds the historian, are not difficult to be investigated. We all of us feel ourselves drawn towards those who resemble us. A genius like our own, pleases us; and it is sufficient for another to shew himself superior to us, to be received with disgust. It is, in truth, a reflection very humiliating to humanity, to recollect all the prejudices which declare themselves for ignorance, superstition, &c. and which have established their empire in society. But this reflection becomes still more melancholy, when we reflect that these prejudices tend to the ruin of our peace, and our health, and, at length, conduct us to the grave. Let us examine more minutely, the fatal consequences of these abuses.

First. Civil society is greatly injured by them. The idle respect that is paid to ancient usages, occasions an indolence which often extends its influence over men of the brightest talents. This indolence prevents us from supposing that we may, perhaps, be in an error, and we are constantly falling from one fault into another. If a prejudiced man, is a man of weight, either by his own abilities, or by his reputation for cleverness, how many ills may he not occasion. The most sage views, the best concerted projects, the ablest, and most ingenious plans, will be presented to no purpose, when such a man shall have the right and the power of saying, '*this thing does not please me.*' He will feel, perhaps, that he is wrong, but shame will prevent him from acknowledging himself to be so, and he will be unwilling to com-

commence apprentice, after having been forty years a master. How few are there in the world, who resist this reflection of Horace: "*Cur nescire pudens*" "*pravè quàm discere malo?*" resembling, in this, the savages of Louisiana, who, when arrived at the age of manhood, refuse to embrace Christianity, because they are too old to practice rules that are so difficult. The sciences, the arts, and even justice and humanity, disappear under the influence of routine; when, to the desire of causing virtue to be respected, there is not joined the power of effecting it.

Secondly. These prejudices disconcert young people. There are few of these, who in this general confusion, have enough of abilities and courage to re-animate their ardor, and exert their care and activity: and who, by sacrificing the early part of their life to study and fatigue, disarm ignorance, and break the sceptre of stupidity, at the risk of their repose, their fortune, and reputation. Surrounded and attacked on every side, the young man, notwithstanding all his efforts, either falls back into mediocrity, or is borne down the tide of prejudice.

These prejudices are therefore very repugnant to the progress of medical knowledge. As there is no form, according to Socrates, which the genius of the ignorant vulgar does not assume, these obstacles are perpetually multiplying. A physician, who is a man of reason, can, therefore, hope to be caressed only by those who resemble him. But he will do wrong, if he attempts to appear wise before mad people. The opinions he delivers on diseases; his methods of treatment, and his remedies will be constantly blamed

or

or despised by those to whom his manner of thinking is obnoxious; and he will be very fortunate, if he is not accused of mixing poison with his prescriptions.

Till the time of the Mamalukes, Ægypt had physicians who practiced with learning, probity, and zeal. But those barbarous and ignorant tyrants repaid the care of their physicians by extreme cruelty. Their profound ignorance depriving them of the least knowledge of the principles of physic, they ordered their physicians to relieve them on the least sensation of pain. The physicians, thus obliged to regulate their conduct by the blind caprice of these absolute masters, no longer aimed at curing with any precision, but at pleasing their princes by an empirical practice; and, without considering the principal seat of the disease, turned their attention wholly to some particular symptoms, which it seemed necessary to mitigate in the instant; and when the pains were moderated, they left the source of the complaints to nature, and the tyrants to their fate.—By these methods, they succeeded in pleasing their masters; and since that period, physicians in Ægypt, are on a footing only with old women.

True genius will never be met with in a physician who gives marks of duplicity, or meanness of spirit; who is capable of pocketing affronts, and ready to laugh with the idle and the foolish, or to sacrifice to every idol. Galen, who deservedly acquired so great a reputation by the many eminent good qualities of his mind and disposition, and who had collected within
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himself all that men before his time had known of nature, complains feelingly of many physicians in his days who were not ashamed to attend in the morning at the toilet, and make their court to the ladies; and at night to be of the most sumptuous parties. In this manner, by modelling themselves to every fashion, they aimed at establishing a reputation. And this the reason, adds this reputable man, why the fine arts and philosophy are considered as very useless branches of a physician's knowledge. Ought we, then, to be surprized that ignorant mechanics should quit their trades, for the sake of practising physic; or, that persons who have learned only the art of preparing medicines, should have the boldness to consider themselves as physicians, and undertake the treatment of diseases? Pliny has very well observed, that he who has impudence, may very easily pass for a physician.

This way of thinking, which has been so long introduced, is the result of the very gross and improper idea that has been annexed to physic in all ages. I have heard it remarked in praise of a physician in great vogue "*that he was as supple as a valet-de-chambre.*" But, can a physician, who thinks nobly of his art; and who knows what he owes to himself and to his patients, ever be guilty of such meanness? It would surely be the way to excite contempt. Physic can never make any progress, while they who ought to contribute towards its perfection, do nothing for it. This abuse is particularly common in England, where the most celebrated physicians sacrifice their leisure moments to the fine arts, philosophy, and the mathematics, rather

rather than in composing any works which may contribute to the progress of physic. Lord Bacon says, that the impostor frequently triumphs at the bed-side of the sick, when true merit is affronted and dishonoured; the people having always considered a quack or an old woman as the rivals of true physicians. Hence it is, that every physician, who has not greatness of soul enough not to forget himself, feels no difficulty in saying with Solomon, "*if it is with me as with the madman, why should I wish to appear wiser than he is?*" Others, who have more delicacy, pursue another course, and aim at acquiring a reputation by following other sciences; mediocrity in physic, being found to lead a man as far in fame as the height of perfection does. Bacon has too well observed, that the length of diseases, the sweets of life, the illusive flattery of hope, and the recommendations of the patient's friends, are sufficient reasons for the vilest and most ignorant quacks being often preferred to the best physicians. An ignorant fellow always gives more hopes than a man of learning.

Friend, who at a very early time of life acquired the reputation of a great physician and a fine writer, adopted the same reasoning and met with the same fate. The reader will see what is said on this subject, by this physician (who was so despised by empirics and the vulgar, and so much cherished by all respectable people) in his letter to his friend Mead. The esteem, says he, in which ignorance is held, is the reason why men of true genius, who might have distinguished themselves in physic, have sought for reputation, by attaching themselves to other sciences; and in these they have often excelled those who seemed to be particularly

ticularly destined by nature to this cultivation. In good truth, they who look up only at glory and reputation, have surely good reason for abandoning an art, in which the prejudices of the vulgar give as much to mediocrity as to the rarest and most accomplished merit, and the practice of which is distinguished by the public, only in proportion to the temerity of the practitioner.

The quack has a considerable advantage over the regular practitioner.—If any one of his promises becomes realized, he is applauded to the skies; and if the patient finds himself deceived, he is obliged in honour to be silent, that he may not expose himself to blame, for having confided himself to a wretch, who has the more right to deceive, as the number of simple people is always the greatest. Besides, this daring man risks no loss of reputation; because, as it exists only amongst ignorant people, the blame will always incline towards those who have listened to him. Men are so fond of the marvellous that the quack has, above all others, the power of making the vulgar relish novelty. The more absurd his promises are, the more he is attended to. He applies a barbarous name to a plant he has just gathered at the entrance of the village, and then giving the detail of his miracles, this plant is adopted for the cure of every infirmity.

Galen has given us the portrait of every quack in that which he has drawn of Theffalus, who lived in the reign of Nero. His father, says he, was a workman, who tried in vain, to give him some idea of what was great and beautiful. Without the least tincture

of letters or philosophy, Theſſalus took it into his head to commence phyſician; and, according to his own groſs way of thinking, he really was ſo. Soon, however, he perceived that he was deficient in many points of knowledge, and in the qualities which are capable of leading on a man with credit in his profeſſion. He ſtill preſerved the tone, the manners, and the language, of the man of trade; and it was, by no means difficult, to diſtinguiſh in him the carder of wool. He began therefore, to win upon his patients, not by preſcribing them remedies properly adapted to the circumſtances of their caſe, but by flattering their hopes, and ſacrificing to their vanity. Notwithſtanding the natural ſeverity of his temper, he knew how to mould himſelf, occaſionally, to the will of his patients, when he ſaw that his low complaiſance would turn to good account. But with all his ſuppleneſs, to thoſe whoſe favour he had gained, or wiſhed to gain, he ſhewed the greateſt impudence and temerity towards all regular practitioners; and he had no ſooner ſucceeded at Rome, by this meanneſs, than he exclaimed, without reſerve, againſt all phyſicians; and even went ſo far as to aſſert, that he himſelf was the only one who deſerved that title. He was not leſs injurious to the dead than to the living; and even took pleaſure in reviling the memory of Hippocrates.

The ignorant and irregular, even of theſe times, agree with this picture of Theſſalus. But is it not ſtrange, that the ſtate ſhould ſuffer this deſtructive breed; and ſurely the people, blind and ignorant as they are, ought not to be abandoned to the prey of theſe impudent and dangerous men. If ſociety claims
a right

a right to oppose the designs of any individual, who wishes to render himself unhappy, why should not she preserve the same privilege, when the safety of a greater number of her members becomes concerned? If society has such a right, she is surely blameable for not exercising it. The sovereign will always be disposed to incline a favourable ear to representations which may be made to him on this subject. The colleges of physic ought, therefore, to unite in the reformation of these abuses.



C H A P. II.

Of true Experience.

I WILL now oppose *true* to *false Experience*, or in other words, reason to extravagance. The term *Experience* has different significations. Mathematicians, natural philosophers, physicians, and moral philosophers, call Experience (*experimentum*) the result of the enquiries they make towards ascertaining the effects they observe in the physical or moral world, and towards discovering their causes, or at least, the manner in which they act. An experiment differs from a simple observation, in as much as the knowledge that an observation affords us, seems to present itself spontaneously to us; whereas, the knowledge we derive from Experience, is the result of some attempt we have made with a view to see whether a thing is, or is not.

A physician, therefore, who carefully considers the whole of the phenomena of a disease, may be said to make observations; and he who in the course of it exhibits any remedy, and notes its effects, may be said to make an experiment. The former of these may be considered as simply listening to nature; while the latter interrogates her.

Experience

Experience proved, that dropfical people fell into fyncope, if too much water was drawn off, at one operation. Cælius Aurelianus, therefore, invented the ufe of a bandage, in thefe cafes. Littre has renewed this method, and it has been adopted by Mead. (*f*) We obferve, that fcorbutic patients are liable to a total privation of ftrength, if they remain

Vol II.

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long

Neither external nor internal ftimuli feemed to have much fenfible effect on him. Whipping with nettles hardly excited any fenfe of pain : and twenty grains of emetic tartar, produced only one fit of vomiting. Neither blifters ; nor plunging him in cold water ; nor a ftream of cold water ; nor plates of ice applied to his head, were able to occafion more than a momentary uneafinefs. In this ftate he continued two years, and it was then determined to inoculate the itch. For this purpofe, deep incifions were made in the arms and legs, and the wounds were filled with itchy matter. He did not feem to mind the operation ; but, on the fecond day the pulse was ftonger, and on the fourth, was fo much increafed, that Dr. Mutzel doubted, whether he had ever felt a quicker pulse. This degree of fever continued during the fifth and fixth days, accompanied by great anxiety and difficult refpiration. On the two following days, the fever abated, the fkin became moift, and a number of fmall red puftules were thrown out upon the furface. On the ninth his fpeech and reafon returned to him. He did not feem to know any thing of what had paffed during the time of his being in the hofpital. In three weeks the puftules were dried away, and he was in perfect health. The inoculation of the itch is, however, no new operation. Zacutus, Luftitanus, and Etmuller, long ago recommended the wearing an infected fhirt, to bring back the eruption of the itch, in cafes, where its fudden difappearance had done harm ; and we fee feveral inftances of the good effects of fuch a method, related by writers of the beft credit.

(*f*) None of our Englifh furgeons, I believe, now think of performing the operation of the paracentefis, without making a fuitable compreffion on the abdomen, but they almoft all of them

long in a chair, when their disorder is in a considerable degree: and this prostration would prove fatal, if they were not speedily to be relieved, by being placed in an horizontal posture. Reynolds, an English surgeon, very properly concluded, from observations similar to this, that scorbutic and other enfeebled patients, might be relieved by tight bandages, so that every position of the body might become supportable, instead of its being dangerous.

In cases of ascites, the ancients rubbed the patient with oil. Dr. Oliver, of Bath, has lately renewed this method, and recovered by it a number of patients, who were given over. Dr. Tissot approves of this practice, and thinks it will sometimes be of use; but he apprehends, it will be more advantageous in incontinence of urine or diabetes, because the pores absorb too much humidity from the air. He is of opinion, likewise, that cantharides applied externally, would do no harm in diabetes; because they increase the insensible perspiration, diminish the absorption of the pores, and add to the acrimony of the urine. Now, it is well known, that in diabetes, the urine is without acrimony, and flows with great ease. There can be no doubt, but, on many occasions, diabetes is occasioned by some disorder in the functions of the skin and the action of cantharides will be likely to remedy this inconvenience.

them place the patient in a chair, during the operation; and even Mr. Sharpe recommends such a position. An horizontal posture, however, will be found to be much more safe and advantageous.

Analogy

Experience (*experientia*) in civil life, in politics, in the art of war, in phyfic, is in general, the knowledge that may be acquired in those arts or those sciences, by observations and trials that are well made; or rather, as Cicero said to Lentulus, *magis experiendo quam discendo*. But in phyfic, we particularly apply the term Experience, to the skill we have acquired in preventing and curing diseases.

This kind of Experience, supposes for its principle, the historical knowledge of its object; without this acquisition, it is impossible to fix to ourselves a mark. It supposes, likewise, a capacity for remarking and distinguishing all the several parts of this object; and it requires a genius, capable of reflecting upon what has been observed; of reducing the phenomena of the disease to their causes; of passing from what is known, to what is unknown; and thus, by deep investigation, discovering all the mysteries of nature, so far, at least, as she suffers them to be unravelled. Thus, erudition furnishes us with historical knowledge, a capacity for observation, enables us to distinguish; and genius, to form the proper conclusions.

It is not, therefore, the opportunity of seeing much which constitutes Experience, because the simple intuition of a thing teaches us nothing: the skilful observation of a fact, is not altogether what is meant by true Experience. They who do not know what they are immediately to observe, or who have not the art of seeing properly, and then reflecting on what they have seen, may run through all the countries of the earth and yet may be said to have seen nothing. A man of this stamp, will enter into a more important career,

career, that of human life, but without penetrating at all into the heart of man. So true is it, that Experience depends wholly on the capacity of him who seeks to acquire it.

To attain this Experience, it is necessary not only to have read the works of those who have disclosed, as it were, the bosom of nature; but a capacity for penetrating these same mysteries, is required to be joined to this. As it happens that men of the greatest genius, and the freest from prejudice, have not always been able to form a just conclusion from the phenomena that presented themselves to them, it will easily be conceived how much prudence and penetration will be required not to be led into error by the assertions and discoveries even of the greatest men. It is, therefore, only by means of the most happy organization, and the most acute penetration, that this Experience should be sought for, either in the works of the learned, or in the bosom of nature; but we should be particularly disposed to give up freely, the principles of our first education, the moment we are convinced of their insufficiency, or even falsity; we should learn to say boldly to our masters, “*you are deceived;*” and not “*you have said it.*”

In every age and in every country, physical impostors have been at variance with true physicians. Notwithstanding this, we are not to suppose that *false Experience* is invariably to be met with amongst empirics; or *true Experience* amongst the dogmatists. Very able physicians have sometimes been of the
empirical.

empirical, and very indifferent ones of the dogmatical sect.

Although even the most despicable empirics have been at all times in no little number, in every nation; yet, it cannot be denied, that from the first ages of physic, till the time when philosophy began to be combined with medicine, the most rational and honest physicians were only very moderate empirics. But physicians were then not distinguished by that name, and, far from forming any particular sect, they all followed the same steps. As soon as they had acquired more knowledge, every one insensibly took a different route. The greater number gave themselves up to useless researches, and employed themselves wholly with frivolous subtilities, resulting from the defective philosophy of the times.

The different opinions which then began to be conceived, and the success which was found to attend some particular remedies, gradually gave rise to a sect, which proposed to itself to abandon all subtilities, and to apply wholly to Experience. This sect dates from the time of Herophilus: that physician considered, and very properly too, the art of reasoning as of less consequence than the means of cure.

But soon, physicians began to be misled in their way of philosophizing on the causes of diseases. They rejected the most important remedies, the efficacy of some of which, had been confirmed by Experience. They were no longer willing either to purge, or to let blood, because these means of cure did not chime in with their systematic ideas; hence it

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was that Herophilus concluded, that the more knowledge men fancied themselves to have, the more they deviated from Experience. Philinus of Cos, his disciple, went farther than his master had done, and insisted that the anatomical knowledge Herophilus had communicated to him, did not add to his resources in the treatment of diseases, and that it was, consequently, to no purpose to attempt to seek for the causes of diseases, as anatomy itself furnished no lights on this head. He contended, therefore, that no physician ought to reason or speculate, but confine himself wholly to observation. Serapion, of Alexandria, reduced these ideas into a system and became, according to Celsus, the chief of a sect, the followers of which, assumed the name of *empiric*, from the word *ἐμπειρία*, which signifies *Experience*.

These physicians understood, therefore, by Experience, whatever was known either as the result of chance or of experiments; and they meant by imitation, the repetition of what had been done in such and such circumstances, after having noticed the effects. A physician, according to their notions, possessed true Experience, when, by means of frequent imitation, he was enabled to establish certain propositions, from which might be deduced, what happens on every occasion, or commonly, or rarely, or in any particular way. They advised, for the acquirement of this knowledge, to begin by making attentive observations, and then reading carefully, what might have been written by others, concerning the history and cure of diseases. They hoped, that by these means, they might be enabled to discover the resemblance between different diseases, and thus to form a judgment in any

any new case, of what ought to be done, by recollecting what had been practised in some known disease: This they called reasoning from analogy. It is evident, therefore, that the Experience of the empirics was founded on the testimony of the senses; or the remembrance of what had been observed by others; and on a comparison of the known with the unknown. So great was the difference between the reasonable empirics of ancient days, and those of modern times.

Serapion and his successors, were of opinion, that it was absurd to attempt to investigate the latent causes of diseases. They contented themselves with noticing those which were evident to the senses. They had some reason for this. It was certainly reserved for anatomy to discover those secret causes; and anatomy, when Serapion lived, was in its infancy. They who attempted to seek for those causes, had only the feeble light of the philosophy of the times to conduct them, and in the midst of such obscurity, they necessarily wandered from one error to another. We must allow, therefore, that the founders of the empirical sect conceived a design which was laudable in itself. They meant to deliver the art of medicine from hypothesis and chicanery; and they were unwilling to inquire after the proximate causes of diseases. Indeed, it would have been morally impossible for them to have ascertained them, and as they would have been led by their researches to the substitution of chimæra for truth, they would constantly have been induced to form false indications of cure. The external or remote causes seemed to merit their attention; but at the same time, they were, by no means anxious to ascertain

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certain the manner in which those causes acted. If they attended to them, it was not with any design of deducing from them any curative indications; because such indications were, in their opinion, too arbitrary. They, therefore, viewed the remote causes in the way they did the other circumstances of the disease, and considered them as a part of the signs which served to determine its nature.

They confined themselves wholly to what came, as it were, under the examination of the senses, and, of course, they conceived that the memory and the senses included all that was essential to the practice of physic. If they admitted any reasonings, they required them to be so simple, that it was not possible to suffer one-self to be misled, and so natural, that they should present themselves, as it were spontaneously. They therefore proscribed only such reasonings as were founded on false or uncertain principles; they rejected neither the examination of the symptoms, nor the phenomena of diseases, nor analogy, nor erudition. Neither Philinus nor Serapion are to be blamed, because their followers or successors deviated from their manner of thinking, and condemned erudition, anatomy, physiology and philosophy, which may be considered as the soul of medicine. The founders of the empirical sect sought after *true Experience*, whereas their stupid successors are satisfied with the *false*.

If the founders of this sect were far from meriting contempt, the dogmatists, their opponents, were, on the other hand, by no means, universally estimable. The name of dogmatists was applied to those physicians,

cians, who founded the practice of their art, on certain principles. They were not satisfied with ascertaining a disease, by collecting together the symptoms which determined its species, they were desirous of going farther, by discovering the causes of those symptoms. All the methods made use of by the empirics, to distinguish and cure diseases, were not disagreeable to the dogmatists; but the latter thought it necessary to deduce the indications, which to them seemed to be the basis of every curative intention. The empirics rejected, as we have observed, the indications, as being necessarily founded on the knowledge of the causes which these physicians considered as useless, or as the source of error; the greater part of those causes being supposed by them to be so many impenetrable mysteries.

The dogmatists derived their indications from the nature of the disease, from its causes and the different combinations of those causes, without recollecting what they had seen in a similar case. Galen somewhere says, that the indications are the basis of true practice, and that he only who discovers the methods which these indications point out, deserves the name of physician: So that, according to Galen, he who does this by Experience only, is an empiric; and he who aims at acquiring it by reasoning, is a dogmatist.

Writers are by no means unanimous, with respect to the founder of this last sect. The dogmatists themselves, look up to Hippocrates as their chief; because, in many of his works, he appears to take no little pains to censure, and with much judgment too, those

who considered practice as consisting wholly in a blind habit or repetition. He himself practised on constant and established principles, and joined to his own Experience, the reasoning of the philosophers who had preceded him. We know, however, that Hippocrates confined himself chiefly to observation, because all the principles, necessary to the art of reasoning were then not yet known, and, of course, it was necessary for him to abstain from them on many occasions. It would seem, therefore, as if Galen, rather than Hippocrates, ought to be considered as the founder of the dogmatical sect. Galen, was in physic; what Descartes has since been in philosophy. Both the one and the other have so well argued on false data, that it is only by following their methods, that we can be enabled to refute them. The empirics had remarked long before Galen's time, that philosophical physicians were led into error, by establishing their reasoning in diseases on arbitrary propositions; and that their definitions were, by no means, taken from nature; they therefore contended, that they did right to confine themselves to Experience alone. Men of the best parts, have indeed, since Galen's time, sided with the dogmatists; but it is well known, that they were to be considered rather, as a number of persons who selected what was best from every method and opinion, than as forming any particular sect. They were indisputably, by much the wisest. The Galenists, properly so called, were truly the antagonists of the empirics. It must be confessed, however, that the empirics were to be considered as true physicians, when they began to form themselves into a sect; while the dogmatists were only erroneous ones, so long as they

continued

continued to deduce their principles from chimerical ideas.

But 't insensibly happened, that the empirics descended to the level of the vulgar ; while, the dogmatists, on the contrary, had courage enough to surmount the many obstacles that seemed to multiply before them ; and at length came back into the route that Hippocrates had followed. In later ages, the chymists gave rise to a new kind of empirics. They neglected all erudition, and even the history and the signs of diseases. They sought at once in their laboratories, both for the causes of diseases, and the method of curing them. The quacks of our days, are the apes of those chymists. Serapion, and his followers, aimed at knowing diseases as well as remedies ; modern empirics confine themselves wholly to the knowledge of medicines, and make light of that of diseases. The former were true physicians, while the latter are, at the most, ignorant apothecaries.

Folly cannot be more opposed to right reason, than the modern empiric differs from the true physician. The latter, respects and cultivates the erudition which the former despises ; because it is not possible for one man to see so much as all the ages have done before him. This erudition, which may be considered as the great light of physic, is the less interesting in the eye of the empiric ; because the number and the nature of diseases, are already determined, according to him, at least, by their evident or occult qualities of the medicine he distributes. So that it is of little consequence to him, to know that such an observation was made at such a time ; or that a similar disease, treated in such a manner, terminated
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in such a way. In his opinion, a disease can terminate or be cured, only in the way that shall be determined by the effect of his remedies. All reasoning, therefore, he judges to be useless. It is sufficient, that a medicine possesses a certain virtue; and it would be to no purpose to aim at imitating nature in the solution of the disease; every thing depends on the remedy, and not on the prudence of the physician, or on the operations of nature. Such is the logic of these pretended Æsculapii, who have had, secretly, in all ages, too many imitators amongst physicians, at least on many occasions. Strabo has said, that it is impossible to be a great poet, without being a man of real probity. This surely, ought, to be applied to physicians. No honest practitioner can look, without horror, on the manœuvres of these detestable empirics. Can any physician, in good conscience, venture to prescribe a medicine, without, at least, having formed inductions from the most exact analogy? Is not that man an enemy to his patient and to society, who pretends to cure, without knowing to a certain degree, the nature of the disease, both from its causes and symptoms, and its antecedent and present state? Is it not to be wanting in every thing we owe to humanity, and even to religion, to approach the bed-side of the sick, without having previously acquired the necessary knowledge? Can any man say to himself, '*I have done all I could do,*' if he is unable at the same time, to say, '*I know all that I ought to know?*' I admire a physician, who has a proper sense of religion; because this, when it is pure, and free from prejudice and fanaticism, agrees well with the principles of honour and probity. Neither Hippocrates nor Sydenham were irreligious men.

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As empirics require no Experience to know what they have to do, they are always able to give an account of their conduct to themselves, when they know how to measure their probity by their interest. They therefore think they have done their duty, when they have imposed on the foolish and the ignorant, who authorise them in their impositions; and in this does all their Experience consist.



B O O K II.

Of Erudition, and its Influence on Experience.

C H A P. I.

Of Erudition in general.

WE understand in general by Erudition, the whole of the several parts of human knowledge, which have deserved to be delivered down to us in books, and treated each in a suitable manner. I say in a suitable manner, because “ each branch of “ the sciences, as Aristotle has well observed, requires “ more or less exactitude only in proportion to the “ object of him who treats it. A workman and a “ geometrician consider a right angle under very dif- “ ferent points of view. The one, only as being useful “ in his work; whereas the other, attentive to the “ truths he wishes to discover or demonstrate, ex- “ mines its nature and properties. Erudition does “ not suppose that a man should enter into an in- “ vestigation of all the causes. It is sufficient, on “ many occasions, to say, that a thing is, without “ giving

“ without giving reasons for its reality ; this may be
 “ particularly applied to some of the principles of
 “ knowledge.” A man of erudition, is, therefore,
 one who knows all that has been discovered before
 his own time, and in such a manner as it deserves
 to be known ; or as Cicero says, *Qui omnium rerum
 atque artium, rationem naturamque comprehenderit.*
 The erudition of a physician, is, therefore, only a
 particular erudition. It is the knowledge of all that
 other physicians have observed and experienced,
 touching the art of preserving the human body from the
 diseases to which it is exposed, and the knowing how to
 distinguish these diseases, or at least how to render them
 more supportable. But the human body being ne-
 cessarily connected with all the parts of nature, it will
 be easily conceived, that medical erudition is required
 to be much more extensive, than it would at first sight
 seem to be.

True erudition, which alone, merits the name of sci-
 ence, rather depends on a certain aptitude of the mind,
 than on the memory ; a very moderate memory being
 found to be sufficient for attaining it, when a man
 unites genius to great application. In supposing
 capacity and inclination, we acquire this erudition as
 well by reading, as by frequenting the conversation of
 the learned, when we are free from prejudices, and
 attached wholly to truth. The ideas of others, their
 learning, their experience, their manner of viewing ob-
 jects ; in short, all that belongs to them, combines it-
 self gradually with that which is truly our own ; and
 after a certain time, if we are susceptible of reflections,
 it seems to us, that all those ideas originated, as it
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were, within ourselves. But in order to acquire such an advantage, it must necessarily be supposed, that our own proper foundation required only cultivation; for without this, it is impossible for us to appropriate to ourselves the riches of others. It is easy to distinguish those who have this quality. We every day see people who have nothing but what is artificial, both in their conversation and way of thinking; and it is only in quoting others, that they imagine they speak properly. A sufficient proof, this, that they have never analysed the least sentiment or the least idea. These people, who are so constantly quoting others, have only a false erudition. True erudition, is an acquisition we ought strictly to make our own. We should evince it rather by the refinement of our genius, than by the number of our quotations. How much would the merit of the learned be seen to diminish, if their works were submitted to this test.

True erudition is peculiar to the philosopher; and experience always supposes it. Before a man can observe each individual thing in nature, he must be acquainted with its particular character; and this not only from the history of nature herself, but from observation, and the examination of the phenomena she affords.

A man of the most refined genius, would be able to learn, only after a great length of time, how to distinguish diseases, if the writings of others did not trace out to him the first lines of this knowledge. It will, therefore, be found to be not a little advantageous to him, if erudition, on many occasions, stands him in the stead of Experience.

Genius

Genius sometimes does harm, when not accompanied by erudition, because the mind, when left to itself, will not always be properly employed, and will be too apt to fix itself by chance, on the immensity of objects which present themselves on every side, if it is not determined to the proper ones. Some certainties must necessarily be known, before we can direct our inquiries to unknown things. It is from the experience of others, that we are to receive instruction. We are to be directed by their thoughts, and borne, as it were, on their wings, before we can be inventors ourselves. It is very unusual for a man of genius, to find a science wholly within himself. I could easily prove, that almost all the great discoveries that have been made, and especially in natural philosophy, in these latter times, are far from being due to those who have been considered as the inventors; or at least, that they have been led to them, by some marks which others had pointed out before them, or by the natural consequence of what had been conjectured, or calculated, or experienced, before the times of these pretended inventors.

C H A P. II.

Of the Prejudices against Erudition.

FILLED with the blindest arrogance, or influenced by the meanest views, many modern practitioners, or those whom I call *empirics*, reject with reason, that which would be able to unmask them. They affect to despise erudition, because they are deficient in it. They require only the language of the vulgar, and are therefore contented with its knowledge. They decry the erudition, and discoveries of all ages, that they may be the better able to persuade the ignorant public, who listen to them, that all that is good and useful, originates from themselves. The public, honour in them, their own prejudices, and these vile souls attribute to themselves the public respect: as the ass in the fable did the homage paid to the statue of Isis, which he carried upon his back.

Cicero very properly said, that it was the duty of a physician to attempt to cure by a method founded on reflection, *curare oppositè ad sanandum*: whereas, in the opinion of these empirics, it is to give for an unknown disease, a remedy, of which nobody is to have any other knowledge than what is to be collected from the praises of its author, and the false testimony
of

of impostors. This is the only erudition, of which these people are jealous, because it is a sufficient plea for their crying down the merit of true physicians.

No book is pleasing to these people, if we except, perhaps, those which have been written by authors, who have aimed at sheltering their ignorance under a veil of hard and unmeaning words, and in which no man fancies he sees common sense, but those who are themselves senseless. They possess, if they are to be credited, the talent of penetrating the ænigmas of these idle dreamers, whilst the luminous brevity of the true oracles of physic, appears to them as the work of obscurity and ignorance. It is indeed true, that these empirics have too little genius to perceive the truth of any principles, or the reason and uniformity of any deductions from them. It is, therefore, by no means to be wondered at, that they should oppose themselves against the Experience of all ages; and even turn into ridicule, all the laws of reason and analogy.

Incapable of generalizing on any subject, their inquiries will, at the most, be some particular details, which they will seek for in books. Every disease will be to them a particular one, which will require a different remedy. They will never learn to relish a writer, who, fully instructed in his art, shall have collected under the same head, diseases, which differ from each other, only by a few symptoms arising from accidental, and particular circumstances. Every author, therefore, who does not tell them all they are ignorant of, will appear to them unworthy of being read. It is so true, that men of true ge-
nius

nus are alone capable of distinguishing a disease, that is characterized only by two or three signs. To understand and relish Hippocrates, a man must possess much of his discernment.

A young surgeon of great merit, attempted the other day, to quiet the prejudices of one of these old practitioners, by some reflections drawn from the excellent Memoirs of the Academy of Surgery, at Paris. ‘*Oh sye*, cried the old man, (shrugging up his shoulders at the same time) *what a book you quote.*’ Another, perceiving, at the house of a patient, Mead’s *Medical Precepts*, a work, which was the result of more than fifty year’s practice, cried out, ‘*What book have you got there? good receipts are surely better than all that nonsense.*’ It is singular, however, that these people, who are so ready to exclaim against erudition, are always the first to make use of Greek and Latin, and other hard words, which they never understood. Practitioners of this stamp, are not only averse to reading themselves but consider reading as the test of ignorance in others. The reader will not be surprized at this, when I shall have pointed out the true cause of this absurd opinion. The successors of the ancient empirics fancy, that the difference of climate, requires a system of medical practice, in every respect different. It will be perceived, that such a ridiculous opinion will necessarily reject all erudition as useless, together with all the knowledge we may derive from the observations and experience of others; and consequently, that a physician ought to create, as it were, a new system of practice, every time he changes his situation. I remember, when I came back into Switzerland, that I could not possibly be supposed capable

ble of practising there, after having spent sometime in France and England, to improve myself in my profession; and they concluded from my English perriwig, that I must necessarily destroy my patients; as I should prescribe to them only English remedies.

It will easily be conceived how useful these prejudices are to the practitioners, who are ready to seize every opportunity of vilifying their brethren, whether young or old. Lentilius, who had been educated in these narrow notions, used to complain, that physicians too often treated their patients after rules, which they studied in very different climates. It is almost incredible, says he, how baneful this error is. It would be necessary, therefore, according to Lentilius, for young physicians to come back and study in some university in their own country, before they attempt to practice.—What reasoning!

Lentilius imagines he is giving a very prudent and wholesome advice, when he recommends it to the inhabitants of Suabia to read the physicians of lower Saxony with great caution, and more especially those of Holland. (*a*)

(*a*) Rosinus Lentilius was a physician at Stutgard, at the close of the last, or beginning, of the present century. He published several works, and was exceedingly averse to venæsection, which he contended, should be practised only in the northern parts of Germany, and on healthy subjects. His writings are still much read and attended to by some German physicians. This is probably the reason why Dr. Z. mentions him so particularly; indeed there will be found more than one Lentilius in every country.

I met,

I met, in consultation, with a physician of this stamp, not long ago. I pointed out the disease in the clearest manner; and happening to have in my pocket, Van Swieten's Treatise on Diseases of the Army, in which the case was very accurately described; a very experienced physician, who was of the consultation, handed it to this Lentilius, to convince him I was in the right. The old man answered, with no little vivacity, and without opening the book, "*I have no opinion of these foreign specifics; they may be very good in their own country, but they are very useless in ours.*"

It has been pretended too, as another reason, why observations made in one country, can afford no useful application in another; that diseases vary according to climate; and that they are, often, of a very different nature, in two neighbouring provinces, or even cities: It is therefore contended, that the methods of cure must be totally different. Galen, say they, defended venæsection, in too hot a country; and Mesuë goes farther, and declares it to be as dangerous in very cold, as in very hot, climates. Barker (*b*) pretended to have learned, from Experience, that blood-letting was absolutely impracticable, in some parts of America; whilst in Brazil, a malignant fever cannot be cured, but by taking away two hundred ounces of

(*b*) The person here alluded to by Dr. Z. is the author of "An Essay on the Agreement between Ancient and Modern Physicians; or a Comparison between the Practice of Hippocrates, Sydenham, and Boerhaave." London, 1747, 8vo.

blood, by repeated bleedings. Lentilius says, he has often employed cordial medicines in the North; but that he found the same remedies hurtful in Suabia, which is in a warmer climate. Acids, he says, are less hurtful in Suabia, than on the coasts of the Baltic. The inhabitants of Guayaquil, are unwilling to use quinquina; because they fancy the climate of Peru to be too hot for this febrifuge bark.

The Suabian practitioner (Lentilius) might, indeed, have had occasion to observe, that heating medicines, are useful in the North, since there are certain cases, in which they will be advantageously used, even in warm climates. He might have remarked, at the same time, that the same remedies, are pernicious to the greater number of patients in Suabia; because they do harm in almost all acute diseases. With respect to what he says of acids, in Suabia, or on the coasts of the Baltic, we may be permitted, now-a-days, to reject his observations.—The ridiculous theory of his times, has been long exploded.

But are diseases never influenced by climate? will it be always indifferent, whether or not, we employ the same methods of cure, in every country? does not the general temperament of men, vary in every climate? most certainly; and I therefore allow, that diseases, and the methods of treating them, will, in certain cases, be different in different countries.—I will even say, that such a difference is necessary.

We know, that every disease is not the same, at all times; and that the same disease is under certain circumstances, and in certain climates, attended with

very different symptoms, from what it is in others. The Lues Venerea, is no longer what it was in the times of Berengarius; nor is it attended with the same virulence, or the same symptoms, in every climate. It is much more dangerous in cold, than in hot climates. A Spaniard goes to, and comes from, Peru, with a degree of Lues, which would inevitably destroy a Dane, in spite of every remedy. (c) The Yaws, which the negroes brought with them, from Guinea, to America, and which have been considered as the origin of the Lues, are at Barbadoes, only blotches which rise upon the skin, and dry away, by the use of certain plants. In some of the other Caribbee islands, the skin becomes as smooth and shining as a looking-glass, without the least swelling, or elevation; whereas, they who go naked, have commonly the skin altogether wrinkled. This kind of Venereal Disease, becomes mortal, if treated with Mercury. Huxham increased the complaints of an Englishman, who brought this disease from Porto-Bello, after having been connected with an infected negroess. The Guaiacum-wood, seemed to produce a better effect; but at length the patient died consumptive.

It must be allowed, too, that the different mode of life, of different nations, will require a variation in

(c) Dr. Z. probably means, that the native of a northern climate, who receives the infection in a hot country, falls a victim to it much sooner than the inhabitants of that country would do. The virus itself, is certainly much more active in the southern parts of Europe, than it is in Britain.

the doses of medicines. Boerhaave prescribed emetics, in Holland, which would have been too powerful for persons, whose stomachs were not loaded with cheese, butter, and putrid fish. The people at Rome, eat less than at Paris, and therefore, they require vomits that are less active. Although this difference of living, claims our attention, we are by no means, to overlook the variety of temperament, and constitution. The difference of season, will likewise claim a peculiar attention.

Yet, notwithstanding all these circumstances, and a variety of others, which the physician ought not to neglect, it is certain that there is something constant and uniform, in the character of the generality of diseases; and that the advantages of a good method, are every where the same. Acute diseases, which constitute two thirds of those, to which we are subject, have, in almost all the countries of Europe, the same symptoms, and the same event, as they had with Hippocrates. This father of medicine, does indeed, himself tell us, that his observations were found to agree, in very opposite climates. We observe, in his writings, many diseases, the names of which have not been changed, because they still afford the same signs he described. The pleurisy, phthisis pulmonalis, epilepsy, &c. are proofs of this. Indeed, semeiology, is that part of physic, which has undergone the least change. The fevers he describes to us, in his Epidemics, have appeared, and will continue to appear, in all ages. This is sufficiently proved, by the writings of Sydenham, and others. The pleurisy, and peripneumony, terminate, according to Hippocrates, by a copious expectoration, or by a critical sediment

in the urine; very acute fevers, and phrenitis, by hæmorrhage at the nose; intermitting fevers, by copious and fœtid sweats; continued fevers, and such as are occasioned by any impurities of the primæ viæ, by purging, vomiting, &c.

It is true, that the critical days, are found to be more conformable, in the eastern parts of the world, to the observations of the ancients, than they are with us. But our observations are found to resemble them, the more we adopt their methods of treatment (*d*); and, if the critical days of the ancients, are not always confirmed in our climates, the cause of the difference, is to be ascribed to the precipitation, with which physicians usually act; for, whosoever will read the Epidemics of Hippocrates, and will patiently compare the diseases he describes, will be convinced, that nature follows very uniform laws, in the solution of diseases; and even of chronic ones. Ignorant people only, and they who have neither read, nor made observations, can doubt the truth of this assertion. It is not here the place to discuss this matter more fully; but, in a few words, we may venture to remark, that, if the greater number of modern physicians, were not too fully persuaded, that it is their duty to do all, we should much oftener be led to confess, by the steps that nature herself would pursue,

(*d*) Many of the most celebrated modern physicians, have declared themselves in favour of critical days.—Of those of this country, who are of this opinion, it is sufficient to name the learned Dr. Cullen.

that she deviates from her laws only, when she has been constrained so to do, either by being disturbed in her functions, or for want of being properly assisted.

If the diseases, observed by Sydenham, are the same as those were described by Hippocrates, I can likewise venture to affirm, that the same diseases appear every day in our country.—They afford, in Switzerland, the same symptoms as in England. If we except some few endemial diseases, there is not one, which is so peculiar to any climate, as not to be observed in another very remote one. We observe, that putrid, and malignant fevers, are the most frequent complaints in southern countries, and inflammatory fevers, in northern ones. This, in general, is true; and yet, the southern countries, are by no means, so unhealthy, or the northern ones so healthy, as has been thought. The air of Castile, is said to be so very healthy, that fevers of every sort, are very uncommon there, and especially malignant ones; whereas, in Sweden, they every year see petechial fevers, small-pox, and measles, of the worst characters. It will be perceived, that this observation includes the most opposite climates.

Not only the acute diseases of Hippocrates, are similar to ours; but his method of treatment, is likewise very advantageously adopted by us. We shall never know how to excel him, in the management of phrenitis, pleurisy, angina, and, in general, all inflammatory fevers; because, by occasionally modifying the rules he lays down, there is not one of them, which may not be advantageously applied to every time and place.

During

During the first days of peripneumony, he advised the keeping the belly open, with a view to check the fever; but to quit this practice, after the fifth day, lest too copious an evacuation, by stool, should prevent the expectoration. In the beginning of pleurisy, he ordered clysters to be thrown up; but to leave them off, as soon as the patient should begin to expectorate; otherwise, says he, the spitting will be stopped, and the patient will die about the ninth day. He likewise recommended the drinking plentifully, in ardent fevers, with a view to calm and mitigate the fever. All true physicians, since Hippocrates, have agreed on the excellence of these methods; nor shall the prejudices of the vulgar, ever lead me, by adopting any other, to nourish the patient, at a time, when nature ought simply to be supported, so as to enable her to conquer the disease. I am averse to the use of animal food, in almost every kind of fever.

The greater part of the means of cure, will be capable of application to diseases of the same kind, in every climate. A purgative, in the beginning of a putrid fever, is a very useful remedy, in every country; while blood-letting may be very pernicious. The dysentery, is cured in the same manner at Batavia, as it is with us. In cases of violent hemorrhage, the Bramins, on the coast of Malabar, advise the use of rice, simply boiled in water, as the only food; in similar cases, here, we direct the patients to a milk diet. Bontius says, that the cold feeds produce the same effects in Batavia, as in Holland. The Peruvian bark, notwithstanding the prejudices of the inhabitants of Guayaquil, cures intermitting fevers, as well in Peru, as it does in Germany, or Holland, or Italy,

taly, or England; it matters not, whether the patients be young, or old; of a hot, or a cold temperament.

It has been proved, that since the time of Hippocrates, true physicians, have, in all ages, adopted certain fixed principles, in the cure of diseases; and have attained this interesting end, by the same curative means. We know, too, that the medicines, which have been more recently discovered, have similar effects, in climates, very different one from the other; provided the circumstances are the same.

All I have said, will, therefore, tend to establish this truth; that there is something constant and uniform, in the effects of good methods, and good remedies; notwithstanding the exceptions, which some particular circumstances of climate, place, temperament, &c. may induce us to make to the general rules. All this, however, is only a variation, and not an essential change, in the nature of things.

We shall be able to vomit a Chinese at Peking, with as much ease, as a Swiss, at Berne, and with the same medicine; although the dose may be required to be different, by some of the circumstances before-mentioned. Baglivi, whose writings and learning we esteem so much, seems, however, to speak too much like a young man ^(e), when he enters into a detail
of

(e) This expression seems to fall too hastily from Dr. Z. after what he has said concerning true Experience. Baglivi's first and best

of the methods of treatment, which may be useful or noxious, in the climate of Italy; since the same rules and exceptions, will be equally applicable to all countries.

A man of penetration, will therefore discover, in the diseases of the most distant nations, those of his countrymen; but he will, at the same time, make the proper distinctions. The country, or the university, in which he shall have studied, will not prevent him from attending to the climate and season, and to the temperament of his patient; and likewise to the consideration of all the causes, as well internal as external, remote and proximate, which the empirical practitioner will wholly overlook, or scornfully neglect. A prudent physician, will despise those people, who draw their rules from chance, or from the prejudices of the vulgar, to whom they aim at sacrificing all learning, and every sentiment of honour, with a view of establishing themselves, at the expence of these miserable victims of their ignorance.

Friend, said to Mead, in one of his letters, “These
“ pretended practitioners, who fancy they are follow-
“ ing nature, even when they are perfectly ignorant
“ of her operations, have often excited my anger;

best work, *De fibra Motrice*, &c. was written, when he was only thirty years of age. He died in 1706, at the age of thirty-eight. He was physician to Clement XI. who appointed him professor of the theory of medicine; and his reputation soon became so great, that he drew to him students from all parts of Europe.— He is said to have harangued with peculiar eloquence.

“ sometimes,

“ sometimes, however, they have caused me to smile.
 “ If these people follow nature, without having studied her, what are we to think of the great restorers of physic, amongst the Greeks and Arabians?
 “ Do their labours and writings deserve, then, only our contempt? In truth, they who think in this manner, and extol their own penetration so much, have never known either nature, or her operations, or indications; nor the means and methods of assisting her, when there is occasion. Learn, therefore, Mead, to despise the vain boasting of these arrogant people, and proceed, boldly, in the path of honour and reputation. Whatever may be the resources of your refined genius, blush not to own the abundant harvest you have gleaned from the writings of our masters.”



C H A P. III.

Of the Advantages of Erudition.

HE who never reads, sees, in the world, only himself. As he has no idea of what has been thought by others, he considers all his own reflections, as of the greatest importance. It is, therefore, by erudition alone, that such a one can enlarge the narrow circle, in which his genius is confined. The too great idea, we entertain of the soil on which we tread, disappears, the moment we consider the totality of the globe.

A man of learning, carefully examines every opinion; and believes what he has been taught in his childhood, only as he finds it agree with what he experiences, as he grows older. As he is sensible of all the advantages of reason, he admits only of that which is reasonable. I do not pretend to confound knowledge, with a vain and conceited erudition. Scepticism destroys itself. Although Sextus (*f*) possessed

(*f*) Sextus was an ancient Greek physician, who flourished about the time of Commodus, and was of the empirical sect. He defended

ferred, as well as Voltaire, the rare talent of bringing almost all readers to be pleased with him; yet there was required only a little genius, to perceive all the insufficiency of his principles.

It is reading and reasoning, which prevent us from finding every thing ridiculous, that strikes our senses; and if the people are so affected by a new object, and so superstitious withal, it is because they never have seen any thing beyond the spot of their existence. In general, Hottentots compose the greatest part of the world. Men are willingly disposed to admire, what they do not understand.

Reading, brings us, in our most leisure hours, to the conversation of men of the most enlightened genius, and presents us with all their discoveries. We enjoy, in the same moment, the company of the learned, and the ignorant; of the wise man, and the blockhead; and we are taught how to avoid the foibles of the human mind, without having any share in their bad effects.

If we happen to possess that delicacy of taste and sentiment, that sensibility, which we can derive only from the hand of nature, to what perfection will not

defended the pyrrhonian or sceptical philosophy, with great warmth, and wrote three books of pyrrhonian institutions; which, with ten books against the mathematics, are all that are now extant of his works. The best edition of them, is in Greek and Latin, by Fabricius. *Leipfic. 1718, folio.*

these qualities lead us, by reading; especially if we join to them, the conversation of men of letters. He who unites reading to taste, sees his thoughts arise with precision, and his reflections analysed with propriety; every word of his compositions finds its proper place, and every expression is, from him, the image of perspicuity:

It is this taste, this refined way of thinking, that insures the reputation of good authors; and it has been remarked, that, in the medical world, the greatest physicians have always been the best writers. If we may believe Celsus, Hippocrates was not less estimable for his eloquence, than for his skill in physic. His writings are remarkable for a brevity of stile; but he wrote in the language of a great master, and with a clearness of expression, which affords nothing obscure to intelligent readers. The other ancient physicians, who acquired a high reputation in their art, were replete with all the learning of their times, and distinguished themselves, by the eloquence of their writing. No Greek physician, till the time of Paulus, was inferior to the best writer of his time.

Fernelius, amongst the moderns, together with Sydenham, Friend, and Mead, wrote with as much elegance, as they thought, and cured as well as they wrote. I do not understand Houlier, when he reproaches Fernelius with having corrupted his classical Latin, with all the inelegance of the Arabians. Signor Cocchi has proved, in his Tuscan Discourses, how much a man, who is desirous of instruction, ought to be interested in the writings of a physician, who, free from any party spirit, knows how to combine together, true
philosophy,

philosophy, literature, taste, and elegance of diction; and at the same time to give a certain moral tone to his medical works, and to express, on all occasions, more than he seems to say.

A man, who is fond of gleaning instruction, can never be idle; his very leisure is employed on some less serious part of improvement. By these means it is, that he perfects himself in his art. Guided by his erudition, he knows how far he ought to follow the ordinary route, and where it will be right to quit it. He sees the consequence and connection of all the things that enter into the knowledge of his profession; and he distinguishes the errors, from the right reasoning, of those who have gone before him. The observations of his predecessors, are his guide; and it is by these he is enabled to quit the labyrinth, in which the ignorant man never finds the thread of Ariadne.

Every thing is undertaken with genius and penetration, when one has learned to distinguish particular cases, amidst general principles. Although it is not altogether the case with medicine, as with the physico-mathematical sciences; there are, nevertheless, certain general data, which are unanimously acknowledged, and which the physician may use with certainty, if he is capable of distinguishing them with precision, and takes, as Hippocrates has said, the qualities of each, only according to their true value.

It is likewise by erudition, that we become informed of the exceptions which are occasionally to be made to general rules. There are some things, which occur

occur so seldom, that is impossible to know what part ought to be taken, unless we have learned, by reading, what is most likely to be of use.

Although general principles are true, and are even better known in these times, than they were formerly, by the improvements that have been made in physiology; it must not be thought, however, that they admit of application in all cases whatever. Nature, although very uniform in the generality of her operations, sometimes deviates from her ordinary route, and hides from us her reasons for this. It is in these cases, therefore, that we must have recourse to the observations of others, and derive from them some information, at least, by reasoning from analogy. Erudition, will, therefore, be useful here; when routine will be altogether unequal to the inquiry. The greatest physicians, and philosophers of all ages, have, indeed, agreed, that erudition is the only way to attain the true knowledge of the art. -

Physic has derived its greatest advantages from erudition, and no progress has been made in it in any country, but in proportion, as physicians have united to the knowledge of others, that which they have acquired themselves. We very well know, that the ancient inhabitants of Asia, were the first who made any observations in physic; but we are unable to say, what these observations were; because, we have no longer the writings of Hermes, which were the guide of the Egyptian priests, who, alone, undertook the cure of diseases. These priests concealed the mysteries of their practice from the community, whom they considered as profane. Galen, however, tells us, that
before

before the time of Esculapius, the Egyptians had no other knowledge in medicine, than a certain routine. The Babylonians, even in the time of Herodotus, exposed their sick in the public places, with a view to consult passers-by. Strabo says the same things of the ancient Lusitanians or Portuguese, and of the Egyptians. Under the reign of Amasis, the Greeks began to be connected with the Egyptians, and it will readily be imagined, that the first knowledge of physic, passed about that time from Egypt to Greece, as the laws did by the means of Solon. An hundred and fifty years after Melampus, the first physician who was known in Greece, Esculapius received the divine honours at Epidaurus, for having added to the knowledge and skill of his predecessors. All his knowledge, however, seems to have been either empirical, or in surgery; Celsus goes so far as to say, that Esculapius was deified, for having exercised physic, with somewhat more refinement than had been common before his time, when it was altogether in the hands of the people; and Pliny adds, that the practice of Esculapius was chiefly in surgery, and that both he and his sons, contented themselves with giving to the wounded, a mixture of wine, flour and cheese.

The Asclepiades, shut up the art, within the temples of their common father, where the sick were obliged to attend, and wait, for the answers of the God, amidst a variety of religious ceremonies; or rather, for the immediate assistance of his mortal descendants.—These impostors continued to abuse the people, till the philosophers undertook to remove the mask, by attending at the bed-side of the sick, and giving

giving their opinion with more truth, though with less parade. Celsus considers them as the true founders of the art. But soon the priests of Esculapius found means to draw over to them, some of the most reputable philosophers; and thus, two parties were formed, and the emulation that took place between them, did not a little contribute to the perfection of medicine.

Hippocrates, as the true descendant of Esculapius, was very attentive to observation; but he was of opinion, also, that a physician ought to know all that had been thought before him, unless he would deceive himself and others. Although Hippocrates was not the founder of physic, he merited, in every respect, the title of its father, by the light which his observations threw on the art, and by the happy manner in which he combined reason with Experience, so as to render philosophy and physic reciprocally useful to each other. Hippocrates proved, by his own conduct, how right he was in saying, *'that a philosophical physician resembled the Gods.'* With his enlightened principles, and the natural powers of his genius, he became a truly great physician; uniting to the most penetrating mind, the most solid erudition and prudence. Indeed, it may well be said, that he either saw nothing, or saw things as they truly were. It was, therefore, by the means of erudition, that physic raised itself in Greece. It was more imperfect in those provinces in which the Grecian writings were unknown. The Romans derived all their knowledge from the Greeks; and physic was with them, only a pythagorical language, till they received the Grecian literature. The contempt, which the Chinese have,
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in all ages, expressed for the inventions and discoveries of other nations, has, even to these times, confined physic to a state of ignorance; although the Emperor Chi-Hoang-Ti, 37 years before the christian Æra, ordered, under pain of death, all books to be burnt, excepting those on Architecture and Medicine. The inhabitants of Malabar, although pretty well civilized, make all their physic to consist in the knowledge of some plants, and in the art of forming, with these plants, certain receipts, which are transmitted from father to son. Physic is still in its infancy, wherever erudition has not extended its light; nor would it ever have been reduced to the principles of a science, without the writings of those physicians, in whose learning, posterity has felt itself so interested. Had it not been for these, ignorance would still have claimed to itself, the right of delivering its oracles; and every empiric would still be considered as a divinity. We know, however, that the Experience of the oldest physician, although he may be a man of the most extensive practice, is not, of itself, sufficient; because our knowledge accumulates with so much slowness, that many ages must necessarily pass away, and the labours of many nations be united, before any science, or even part of a science, can be brought to perfection. It is usually some great genius, who opens a new route, others advance in it, after him, perhaps to a considerable length, and 'tis often reserved for a fourth person to attain the end, after overcoming a thousand difficulties. Neither Bacon nor Newton, would, of themselves, have done all that had been done before their time; and without the discoveries of Descartes, Newton would, perhaps, have finished where Descartes began. The greatest men have stood in need

of the knowledge of preceding ages, while an empiric, like a truly ignorant fellow, is so conceited with himself, as to fancy, that he alone possesses all the learning of the world.

A physician, therefore, who would, by his own Experience, learn the things, which erudition would furnish him with in a few years, would require a life of several ages, besides the most sublime genius. But it is not given to every man to live to the age of a Nestor, or to be the inventor of all the arts, which are essential to the knowledge of one. All the sciences are sisters, and mutually lend their hands to each other; and they are, all of them, rather the daughters of time, than of genius. (g) Whatever may have been the features of each of them, at their birth, they never appeared charming to man, until time, assisted by the hand of genius, had rendered them interesting to humanity. It is well known, how much time is necessary to the perfection of any art; whereas, reading furnishes us in a very short time, with the discoveries of all ages. A single moment, is sufficient to inform us of a great number of truths, which were purchased by the care and trouble of years. A physician, though possessed of the finest genius, will, without reading, be liable to fall into the errors of the first observers, before he attains the least truths, that books would afford him. To see an error pointed out, is to have made some step towards knowledge; and to have found, at

(g) *Medicina non ingenii humani partus, sed temporis filia. Baglivi.*

the same time, the means of avoiding it, is to have acquired a true knowledge. Such is the advantage that reading affords us, on a thousand different objects. But, is the avoiding of error, the only end that we obtain by reading? It is certain, that, with the assistance of a little genius, we are soon led by it to true knowledge; for it is easy to acquire truth, when we are informed how it may be disguised, or what is only a false appearance of it. One truth, soon leads us to another; but the progress will be much more rapid, when the first truths are already known. 'Life is short, said our great master, but art is long.' (h) It is, therefore, impossible to experience every thing one-self. It is the object of history, to collect together the observations of different ages; and it is by reading these, that the man of erudition appropriates them to himself. A thousand physicians, said Rhazes, have laboured for a thousand years past, for the improvement of physic, and it is by carefully reading their works, that a man will inform himself of more things, during a very short life, than he would by running from patient to patient, even during a thousand years. It is true, that Sydenham employed in observation, the time which others have devoted to reading; and empirical practitioners, will, perhaps, be disposed to quote him in their favour. But I will observe to them, that they will have no claim to the authority of his example, till they are possessed of his extreme penetration in inquiry, his indefatigable ap-

(h) Ο Βίος Βραχυός, ή δε τέχνη μακρός. Hipp. Aphor. I.

plication, and the genius, for generalizing individual observations, which led to the establishment of the true and solid principles, this English Hippocrates formed to himself in practice. It is well known, that in the time of Sydenham, physic was so obscure a chaos, and the love of hypothesis so prevalent, that the rules, followed by physicians, were drawn from false ideas, which led them, every day, farther from reason.—It was reserved for Sydenham to bring them back to truth and nature.

Reading renders us familiar with the methods of every time and country ; and thus we are enabled to become inventors, without seeming to be so. A man of genius, soon perceives the modification he is to adopt, when he is about to put the precepts of others in practice. He becomes, as it were, an original, without wishing to appear as such. He applies a principle, but he confines or extends the sense of it, according to the nature of the circumstances, that occur to him. If Sydenham wished to be every where his own master, it was because he possessed the rare prudence of interfering with nature, only when he perfectly understood her indications. Sydenham, was truly an original ; and yet, at the same time, he acted with extreme caution, in modifying, and varying and correcting his modes of treatment, till, by repeated observations, he had learned when he might depend on the language of nature. His example, proves to us, how much prudence and sagacity are required to be an original in early life. In general, it is so rare to be an original, with success, that we have seen, as yet, only one Great Corneille, who has created and perfected his art, in France. Greece, could

could boast only of one Homer. (*i*) These advantages are purely the effects of genius.

If the art of physic, necessarily requires its followers, to be men of genius, it demands, at the same time, that they should be instructed in the manner we have mentioned. Nature, being infinite in the combination, production, and variation, of all her phenomena, the physician should study her attentively. He will attain much of this knowledge, by reading and attending to the observations of others. In order to make observations himself, it will be necessary for him to have some fixed principles to build upon; he will be capable of distinguishing diseases, only in proportion as he is previously acquainted with their history. Hence the utility and necessity of reading. The most interesting symptoms of a disease, are often so imperceptible, or are so transitory, that he who knows not something of them beforehand, from historical observations, will almost always fail to notice them. The penetrating masterly eye, which is so useful at the bed-side of the sick, depends, indeed, very often, on genius. But no man will understand any thing, of which he has not previously a true idea; nor will he reap any advantage from what he sees, unless he is aware of the tendency, nature has on the occasion.

(*i*) Dr. Z. might have added our Shakespeare to these examples, if more had been necessary. 'Ce Dieu du Théâtre,' as M. Clement, his French editor styles him, having, in the fullest sense of the word, possessed a creative genius.

Without

Without this knowledge, the principal disease, is sometimes mistaken for a single symptom, or a symptom for the disease itself; and in acute diseases, the patient is almost in the grave, before any regular method of cure has been adopted; and the practitioner, so far from being able prudently to assist, or foresee the wants of nature, is unable even to follow her. On such occasions, we ought not only to be able to say, from our knowledge of the animal œconomy, what may be expected to result from such and such a determination, in certain circumstances; but we ought likewise, to have seen, in the observations of others, in what way nature terminated similar diseases, and with what success art attempted to imitate, or assist her operations in those cases.

Without such a knowledge, not only acute diseases, will almost always terminate fatally; but even chronic ones. Indeed, in these last, it must be confessed, that all the resources of physic, too often fail. A physician, therefore, who ventures to approach the bedside, without this previous historical knowledge, can be considered only as an useless and idle spectator. Happy is the patient, whose physician, with such limited knowledge, is sufficiently timid and diffident, to remain altogether inactive! May it not be asked, whether Sydenham himself, did not lose many patients, from not having derived from the writings of others, by an extensive reading, many parts of knowledge which he could acquire only by infinite care and industry? The more observations on any particular case, we have collected from books, with the more precision will our judgment be determined. A physician, who has not read, must necessarily be exposed

posed constantly to fear and uncertainty. The small number of diseases that any one man can have an opportunity of seeing, will afford him but a feeble light. His observations will be confined within a very narrow circle. Can such a man distinguish, in an extraordinary case, either what is indifferent, or what is dangerous, as he would have done, if he had cultivated books? Is he not necessarily obliged to fear, when his uncertainty, can, at the most, afford him hope? And can he fail, in such a situation, sometimes to promise much, in the very moment that the patient is expiring; as I have, more than once, seen happen, to the disgrace, not of the art, but of the physician? Will not such a practitioner, often attend to a symptom, which is of little consequence, and thus neglect, or overlook, an essential symptom, on the treatment of which depend the life and health of the patient.

It, too often occurs, that diseases are attended with such particular circumstances, that, without the assistance of books, a physician would know nothing of the matter, till the death of the patient. How often does it happen, that even the inspection of the dead body, affords us no satisfactory information, even after the most exact dissection? We have occasion to see, in Switzerland, as in other countries, some of those intermitting fevers, which carry off the patient, in the third or fourth paroxysm. The patients die, as it were apoplectic. A physician, who has studied the signs of these fevers in Torti and Werlhoff, will at once master them, and save his patient; whereas, the practitioner, who never reads, will only gape over his patient, during the first and second attacks, and will be, as it were, thunderstruck, to see him die

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in the third. De Haen, has seen Tertian fevers prove fatal in the third fit. He proves to us, after Sydenham, Morton and Huxham, that certain diseases, in which no fever is perceived, are however, true fevers, and ought to be treated as such. Of this number, are apoplexy, colic, and in general, all diseases, which arise from some degree of inflammation, and which, having regular fits, although without any sign of fever, become mortal, in one or other of the attacks, as those physicians have observed. It is certain, therefore, that the knowledge of these diseases, can be derived only from books; and that the physician, who is the most in vogue, is the most dangerous, provided he does not read. Such a one may be said to look on, without being able to discern any thing; and, by being equally ignorant at the end, as at the beginning, of a disease, he will, at most, have the talent of abandoning to nature, a disease, which he might have cured, if he had learnt how to know it. Boerhaave, candidly tells us, that, after having observed the Lues Venerea, during thirty-six years, he met with symptoms, which the oldest observers had not seen before. Amidst these difficulties, he had recourse to the best writings on the subject; and after having carefully read them all, we are informed by him, that in a little treatise by Hutten, (k) he discovered the

(k) The title of this work, was *De Guajaci Medicina & de Morbo Gallico*. Moguntia, 1519, 4to. An English edition of it was published by Thomas Peynel, in 1540. Hutten, in this work, asserts, that after trying mercurial unctio, and other remedies, to no purpose, he had found his cure in Guaiacum. Astruc, however, who had an antipathy to this remedy, goes so far

the means of relieving the most desperate cases; even when Mercury was of no efficacy. In this book, he declares likewise, to have found all that quacks, and venders of secret remedies, have vaunted, at different times, for the cure of this disease.

All diseases, are not even known to us by name. The number is so great, that the most experienced physician cannot flatter himself with being acquainted with them all. A disease, sometimes makes its appearance in a country, which had been very well described by authors, but which is unknown to the physicians of that country. Great numbers of sick are carried off, and recourse is had to old practitioners, till some young physician, in the course of his reading, discovers the true nature of the epidemic, and saves, perhaps, a whole province, by a single observation. (1) There have been many instances of this. It is neither in fair weather, nor with a favourable wind, that we discover the ignorance of a pilot. The true physician is seldom known, but in extraordinary cases. The ordinary practitioner, who trudges on in an old-beaten track, seems superior to the man of real learning, so long as he continues within his circle; but the moment a new and singular disease occurs, the mask drops, and the popular practitioner is at once confounded with the vulgar.

far as to say, that Hutten himself died of the Lues, three years after the publication of his book.

(1) How applicable is this observation to the celebrated Dr. Fornergill. The first edition of his account of the ulcerated fore throat, was published so long ago as the year 1747.

The advantages of erudition, are, indeed, so considerable, that every physician ought to attain it. If his capacity is unequal to it, he will do well to give up the study of a science, for which he is not destined by nature.



C H A P. IV.

Of the Characteristics of Medical Learning.

THE number of men of true learning, is inconsiderable; and of those who really are such, the knowledge of the greater part, is of no use to society. Their acquisitions, are like gold in the hands of the miser, which affords no advantage to the state.

I distinguish what is usually called erudition, from true learning. A man of erudition, may, at the same time, be a very great simpleton; whereas, a man of true learning, must, necessarily be a man of genius. He not only is acquainted with the sciences, which depend on reasoning and memory; but he possesses a true spirit of philosophy, which forms, as it were, the soul of his learning.

Erudition, considered by itself, is a mixture of good and bad things, often contradictory to each other, and badly digested; which burthen the memory, at the expence of common sense, and render the simply lettered man, rich, in provisions that are uselefs, and poor in ideas; great in minute things, and very little in great ones.

One of these lettered men fancies himself of vast importance to society, when he has retained the divisions and chapters of all ancient and modern works, and can tell how many times a word is to be met with in them; although he has omitted to inquire, whether the sense of the word is of any utility to the physical or moral man. These people, forgetting that man was destined to think, collect together, passages, without ever knowing the spirit of them. They are like some persons, who keep together the ruins of a building, without reflecting, that the materials may form a regular edifice. If a word, or a quotation follows in due order, they are very careless either of the choice, or the order, or the connexion. They are satisfied with the page, when it is well filled; and they conceive the mind to be sufficiently ornamented, when they are able to repeat thirty or forty words, to explain one. Happily for the present age, this rage for philology, is, in a great measure, passed away. We now require words; but, in matters of science, we require only such as are useful.

I do not, however, mean to blame philology itself: I wish only to ridicule the absurd custom of commenting on the words and ideas of others, without ever thinking ourselves. This vain collection of borrowed ideas, keeps the mind in a state of vile servitude. A man will never know the powers of his capacity, until he tries what he can do. The most learned physician, is, therefore, a very useless man, if he has not read, rather with a view to improve his genius, than to burthen his memory; and to collect together, interesting truths, rather than to accumulate words. We learn to judge soundly of things, only
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by uniting to erudition, a genius, that is capable of appropriating to itself, the thoughts and the learning of others. We shall, then, not be liable to receive erroneous impressions from books, because our judgment will be firmly established.

It is only the man of true learning, who can distinguish the merit of every writer ; and it is particularly from such a capacity, that the success of our labours depends. When we are aware of the progress that has been made in a science, and of what is certain, doubtful, or altogether unknown ; and likewise of the manner in which we ought to discuss what is doubtful, or inquire after what is unknown ; we then know what ought to be rejected, examined, or adopted. Without this critical discernment, which belongs to genius alone, nothing can be read with advantage. Reading will only serve to corrupt the judgment, and weaken the mind ; we shall believe many things, but, at the same time, know but few.

Medical writings, like all others, contain errors, in the same page with the greatest truths. The prejudices of authors, have often buried these truths in the darkest obscurity. There are few of those great masters, whose least reflection is a luminous truth, and an important precept : it is more frequently amongst a dull assemblage of words, that we must have the courage and the genius to search for an observation, which seems to elude the most penetrating eye. The greater number of writers, say but very little, in the most tedious details ; and we are obliged to read with great patience, that we may, from time to time, glean some interesting advice.

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The philosophical genius, which has been so long misunderstood, in modern times, and which rendered the ancient writers so solid and important, could not make itself felt, in times, which were instructed only through the channels of authority or prejudice; and the writings of physicians, did not fail to partake of this abuse. The futility and reveries of the schools, influenced every mind, and left no other distinction between the learned and the vulgar, than the blind respect, which the people are always willing to pay to what is mysterious.

The learned of those times, were ignorant men, and the superstitious vulgar, might be said to know more than they did; because they believed more. The modern reader, is required to have the more genius in reading those authors; because their writings abound only with false genius.

Hippocrates will always be considered as the father of physic; and from his writings was derived almost every thing that is good in Plato, Aristotle, Galen, and the Arabians. Cicero seems to have read him attentively. Plato, who was cotemporary with Hippocrates, has left us in his *Timæus*, a kind of system of the theory of medicine. Nor was he a stranger to the practice of physic. Other philosophers, both before and after him, applied themselves to it. It is even asserted, that Aristotle followed the trade of selling medicines, till he became the disciple of Plato, and the preceptor of future ages. Aristotle, has certainly been very useful to physicians; and we find, in almost all his works, the most interesting truths in natural philosophy, and the animal œconomy. Baron Haller considers

considers him as a man who united a most uncommon genius to the most assiduous application, and who arranged his ideas very methodically, though he seems to have been more calculated for generalizing the observations of others, than for forming any himself. He had only one defect, and this was common to all antiquity. Nobody made experiments, while all were ready to adopt whatever was fabulous or false. Volumes might be filled with the fictions which the poets, and the people have advanced.

Galen joined to an extraordinary degree of erudition, a most lively and inventive genius. He was thoroughly versed in the peripatetic philosophy, and in all the systems of antiquity; besides this, he was truly eloquent. Suidas says, that Galen had written more than five hundred treatises on physic, and about two hundred and fifty on other sciences. Never had any physician a more vast or penetrating genius, than Galen; and one cannot reflect, without wonder, that he was able to unite within himself, and into one system, all that was known in physic, even to his own time. The pure doctrine of Hippocrates, is sometimes obscured in his writings, amidst minute subtilities; nevertheless, Galen followed Hippocrates in his practice, rather than any other physician. It is this which renders his works so interesting to us. In the opinion of the best judges, the difference between the writings of Hippocrates, and those of Galen, lies in this; that those of the former, are founded on experience; whereas, all that is peculiarly Galen's, in his writings, is theory.

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The practice of Hippocrates, is supported with very little reasoning; whereas, Galen often gives way to the discussion of arguments, which have more of ingenuity in them, than real use. In his practice, however, as we have already observed, he followed Hippocrates; and in general, he seems to have constantly had in view, this maxim,

Λεγει πρακτικως, η πρακτικε λογικος. (m)

The Arabians added much to the subtilities of Galen, and they gave so much way to their imagination, that physicians employed themselves on empty and unmeaning ideas. Their system of physic, was made up of bold hypotheses; and with these they were contented. And yet, with all these imperfections, it must be confessed, that they improved on the methods of treating acute diseases, invented chymistry, and rendered pharmacy subservient to physic. With respect to the theory of medicine, and the principles of practice, they only repeated what they derived from the Greeks.

Physicians in Europe, were long employed in commenting on these sophists. The writings of the Arabian schools, were known and studied long before those of the Greeks. At length, about the beginning of the thirteenth century, the Grecian literature began to be revived, and with this, the writings of Galen. Instead of contemplating, or analysing nature, they

[(m) 'Reason as a practitioner, and practice with reason.'

analysed Galen; and physicians were satisfied with admiring him, without attempting to improve the art itself. Some of them composed very dull and tedious commentaries on his writings; others abridged them. All of them agreed in adhering so religiously to the tenets of Galen, and Aristotle; that, with these on their side, they chose rather to err, than to embrace truth, by following the systems of others. (*n*)

At length appeared the chymists. Paracelsus, a native of the Canton of Apenzel, in Switzerland, a great chymist, surgeon, and astrologer, undertook to found a new system of physic, on the ruins of those who had gone before him. From his professor's chair at Basil, he burnt publicly the works of the ancients. In the first part of his Treatise on the Plague, he observes, that there is nothing in their writings, which can afford us any true help; because they know neither the cabala nor magic, and, of course, could not be acquainted with the origin of diseases. He went so far as to say, that Galen had written a letter to him, from Hell, and that he had himself disputed with Avicenna, on the borders of the infernal regions. His imagination was so eccentric, and he indulged so much in the most idle reveries, that he adopted all the tales of forcery, astronomy, geomancy, chiromancy, and the cabala. He used to

(*n*) It was Riolanus, who asserted in his inaugural discourse, that he had much rather err with Galen, than cure his patients with the remedies of Paracelsus.

say that when God refused to assist him, he constantly had recourse to the Devil.

Paracelsus undertook to cure incurable diseases, by means of certain words, or characters, the virtues of which he extolled, beyond any of the powers of nature. He even went so far, as to assert, that by chymical means, he could produce a truly living child; which, except in not being quite so large, should resemble, in all its parts, other children. And yet, notwithstanding all these dreams, Paracelsus contended, that he had studied nature wholly in herself, and not in books. In other respects he led the life of a filthy animal, and passed away his hours in the most vile and dissolute society. Language, which was given to men, to make themselves understood, is with Paracelsus, an incomprehensible jargon. His writings seem to partake of the drunkenness, in which he continually indulged with his sottish companions. The mysterious stile in which he wrote, seemed, in the eyes of idiots, to conceal the most important truths. He asserted, that nobody could refute him; and in this he spoke truth, because nobody could understand him.

With these qualities, however, Paracelsus attained to the highest reputation in physic, and is still in great consideration with weak and ignorant people, who are attached to alchymy. This is the way in which he writes, in the preface to one of his books, entitled, *Paragranum* " 'Tis your duty to get behind
 " me, Avicenna, Galen, Rhases, Mesue, Montagnana;
 " behind me, doctors of Paris, Montpellier, Suabia,
 " Cologne,

“Cologne, Misnia, and Vienna. You, Islands of the Sea. Thou, Italy; Thou, Athens; Thou, Greek; Thou, Arab; Thou, Israelite, behind me; for the monarchy is mine.” He was constantly poor, notwithstanding his art of making gold. His universal and infallible remedy, was never able to preserve him from the gout, or from his cough, and the stiffness of his joints. In short, he, who possessed the *stone of immortality*, suffered himself to die, before his fiftieth year. It is to no purpose, that the tricks, the temerity, the extravagance, and the superstition of this man, are so strongly marked in his writings: his followers have considered him as a divinity.

Van Helmont followed Paracelsus in many things. Like him he had a sovereign contempt for the schools of his time; and this, not without reason. He directed his researches to the most powerful medicines; and he considered, as Paracelsus had done, chymistry as being superior to physic. He despised the observation of the seasons, and their changes, and likewise the signs and the causes of diseases. He, too, had his universal remedies, and his wonderful panaceas, and was equally conceited of his own merit. He says, in one part of his writings, that God had enlightened his mind, the moment he threw away his books, to travel in the world on the wings of truth. In another place, he asserts, that nobody knew any thing of physic, besides himself. He extols himself, for having made more progress in the sciences, while asleep, by the assistance of dreams, and nocturnal apparitions, than he had done by the use of his reason. He says, that the practice of the ancients is good for

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nothing,

nothing, because they were heathens. (o) Such is the reasoning of this wise Fleming!

In this low state of learning, the number of simple and compound remedies, multiplied every day with extreme confusion. The Galenists attributed to their simples, virtues, which seemed to surpass any thing that could be expected from human nature; and, according to them, every plant was an almost universal remedy. The chymists, on their side, related the most wonderful things of their extracts and tinctures. Their sublime works were displayed as the triumphs of nature; and the most consummate ignorance, assumed in them the tone of the most respectable oracles. In short, both the Galenists, and the chymists, are so absurd in their doctrines and remedies, that it would seem wonderful that they should still, even in these enlightened days, continue each to have their followers, if every day's Experience did not convince us, that the most ridiculous opinions, are always the most durable amongst men. The works of those writers, will be, therefore, more likely to lead us into error, than to inform us; if we are not previously aware of

(o) Lobkowitz has given the following character of this person. "Van Helmont, for I knew the man, was pious, learned, and of great reputation. He was a sworn enemy to Aristotle, and Galen. The sick never languished long under his care, being usually killed, or cured, in two or three days. His writings are one continued satyr against the Peripatetics, and Galenists: they are very voluminous, but do not abound much with medical instruction."

the real utility we have reason to hope to find in them.

Writers, in general, inform us of what they themselves think ; but there are few of them, who tell us, at the same time, what *we* ought to think after them, or how we may learn to think well. It is this want of fixed and enlightened ideas, says the celebrated M. D'Alémbert, which excites in us the desire of knowing the thoughts of others ; and we endeavour, by this appearance of true or false knowledge, to replace, in the best manner we are able, our deficiency in true knowledge. We ought less to inquire after what others thought, than to distinguish what they thought justly. M. Le Clerc, speaking on this subject, says, that there are, in various parts of Europe, societies established, for the progress of physic, and that the views of all of them were grand and pleasing ; but that, by some fatality, which he would not undertake to explain, they were badly fulfilled, and their writings, were rather a collection of what had been already said on a thing, than of that which ought to be said. He adds, that we find, in those collections, all the idle tales of old women ; as if natural history was deficient in absurdities.

Some laborious writers, whose zeal cannot be too much praised, pursued other measures to render themselves useful to posterity. They were desirous of exhibiting a view of all that had been said before their time, and then of giving us a history of diseases, by drawing together the ancients and moderns. But these views have been so badly executed, that it would seem

seem as if the authors consulted rather their own interest, than the reputation and advantage of posterity. These Nosological works necessarily suppose that which has never been, by considering diseases as being absolutely different in their kinds; and the semeiology, which is the part we require as our guide in these details, is so badly described, and so superficially analysed, that the unlearned can draw no immediate advantages from them; and he who is well instructed, has no occasion for them.

Other physicians undertook to give the history of diseases in very short extracts. In these, each disease was to be characterized by taking, from different writers, its most exact and precise symptoms.—This design was a very laudable one; but where is the man, who would be capable of doing justice to it? Do not all the abridgements that have been offered to us, hitherto, leave us more than half the things to be wished for; and, in general, does not the spirit of system change even that, which would, perhaps, otherwise, have been good? When I read a disease in Hippocrates, I see its history clearly described in three or four lines. If I read the same disease in a modern writer, I find a long detail of three or four pages, in which I can distinguish almost any other disease. This abuse seems to originate from physicians allowing too great a scope to their imagination, when they attempt to copy nature.

It is only in those writings which delineate nature to us, with all her features, and in her proper point of view, that we can learn how to know, or preface what will happen. Accurate observations, therefore,
joined

joined to such reasonings, as may enable us really to interpret nature. can, alone, form the true physician; and such were Hippocrates, Fernelius, and Sydenham. All three of them, however, seem to have acquired this rare talent, by a very different conduct.

Hippocrates, enlightened by observations, which he was often obliged to rectify, as he himself tells us, appears to have been long attached to particularities, before he began to generalize his principles; but he did this, like a great master, as soon as he was able. Fernelius, born with a truly philosophical genius, and ornamented with all that he could derive from the philosophy and mathematics of his time, had studiously applied himself to the writings of Hippocrates, which he read incessantly, together with the works of Plato; and Cicero. He began, as Newton did, by great principles. and then he descended to particularities. Sydenham acquired a knowledge of nature, by indefatigable labour; but his steps were often erroneous. He had the rare talent, however, of distinguishing his faults, and of finding out the way to correct them, constantly drawing his instruction from nature. The true records of physic are to be met with, only in the writings of those, who were of the same cast as the three we have mentioned. But, whatever may be the merit of an author, we should never follow him so blindly, as to copy his errors.

We receive, with acknowledgement, the good counsels of Galen, of the Arabians, and of the enlightened physicians of the middle ages, who, being free from the prejudices of their times, and solely attached to the love of truth, appeared, in their day, as an Aurora borealis,

borealis, without dissipating all the obscurity of the night. Every book is interesting, when it supplies us with principles that agree with the operations of nature, although it may contain only some reflections, which may be sufficient to complete an observation, or to become, as it were, the foundation of other, and more extended ideas. The works of Lord Bacon, which in certain respects, are by no means, interesting now-a-days, were formerly of the utmost importance. We see, in them, the greatest discoveries of the moderns, pointed out, as it were, with the finger. They serve, at least in these times, to mark out a part of the progress of the human mind. They who supply us with an occasion for thinking, often merit more of our praises, than those who have discovered, and confirmed truths, which were, before, only simple hypotheses.

It is not too extensive a reading, that renders a man learned. Reading, in general, impairs ordinary minds. They soon become like a sieve, and retain nothing that is thrown into them. Without a genius formed for the sciences, reading supplies us only with opinions, and we never shall be able to analyse any of them. He who speaks truth, will, perhaps, be him, whom we shall the least feel. Ten authorities will be more to be feared than one, if we are unable to distinguish which of them is legitimately founded. There are some persons, who fall into a different abuse. Pleased with the manner of one writer, they read only him, and they soon conceive, that all others speak truth, only in proportion, as they think with him. There are some, who confine themselves wholly

wholly to one writer. A physician told me, not long ago, with a view to authorize this conduct, that one of the most eminent physicians in England, had never read any other works than those of Prosper Alpini, although no physician was ever more successful in his practice. I will allow this. I will even say, that Sydenham had read no medical work whatever, when he began to practice. It seems right to adopt a middle way between the two extremes. The number of good writers in physic, is very small. Of this number, many are only interesting, by amusing the leisure of a curious man. I would, therefore, advise a physician to confine himself to the reading this little number of good observers. All the true writings of Hippocrates are not equally important.

I believe I have made it sufficiently appear, how necessary it is to unite together the observations of all ages; without having occasion to say, that he, who should read only one author, although that author were Hippocrates, would be ignorant of what there is required to be done in many circumstances. As a physician is not always able to choose his method of treatment, and as many accidents may occasionally vary the appearances of a well known disease, it will be necessary to have recourse to analogy; and how can any man give the necessary scope to his inquiries on such an occasion, who is not able, from his reading, to draw together all the lights which different authors may afford him on the subject.

C H A P. V.

Of the Influence which Erudition has on our Experience.

ALTHOUGH the learning of our predecessors, gives us their Experience, the moment we have acquired it; yet, we must not imagine, on that account, that we are constantly to be considered as men of true learning. With all this knowledge, a man may still retain his prejudices. We see, every day, people of a prodigious erudition, who adopt the most absurd opinions. True science, said Plato, and Aristotle, consists not so much in knowing and adopting what others have known, as in judging, within ourselves, on what we read and see. It consists in seizing the true spirit of a thing; in seeing it in its true light; in distinguishing what men have added to it; in strengthening our judgment, and ornamenting our memory; in extending our knowledge; and, in short, in being the dupe neither of men times, place, nor authority.—This is true science.

In the same manner, says M. Deslandes, to believe, is not as with the vulgar, to give faith to every thing that others say; but to examine seriously, the reasons
which

which should induce us to believe, or disbelieve a thing. It consists in distinguishing truth from what has only the false appearance of it, or certainty from probability. In short, it is to be convinced that the opinion we adopt, or the measures we pursue, are such as ought to be taken; and then we proceed with perseverance, until, after every possible inquiry, we find ourselves in error.

We, therefore, may be said to have learned only that which we have appropriated to ourselves, by reflection. This alone, is the source of true science. We, therefore, believe nothing from the mere persuasions of others, but solely what we ourselves clearly distinguish; or, in other words, what appears to us to be indisputably true. But the truth, which Cicero considered with so much respect, and as the essence of the divinity itself, is something of so delicate and exalted a nature, that few men, in any age, have been supposed capable of familiarizing themselves with her.

With this way of seeing and believing, the Experience of different ages will no longer be an erroneous guide to us, but will teach us what will be true and useful in every case. Without such an Experience, a physician will merit no consideration. He will have read, perhaps, the observations of all ages; but, in general, he will know only useless particularities, if he is not able to establish certain principles, by drawing together what he has read, and distinguishing, what the author himself saw, from what he ought to have seen.

True physic does not depend on individual observations, separately considered ; but on the united observations of all ages, and nations ; distinguishing, however, what may be peculiar to any time, or place. I would prefer, said Rhazes, a physician, who had never seen a patient, to one who should be ignorant of what had been said and written by the ancients. It is certain, that when he has read, and compared together, their precepts and observations, he will, with a very little practice, be enabled to treat the sick with more success than another of the greatest practice, who never reads.

The experience of others, is, sometimes, more advantageous to us, than our own ; and this, even in cases we have often had occasion to observe. To carry in our memory the description of a disease, as it is drawn by a great master, is to be able to distinguish it, when the case occurs, with more precision, than we should do from our own Experience alone ; unless we are one of the few rare observers, to whom no essential sign, not even the least sensible one, can escape.

It often happens, that we cannot see so well with our own eyes, as with the eyes of others. It is, besides, much more easy to ascertain a truth, or a discovery, than it is to find it. Experience, says Lord Bacon, would become, in some degree, useless, had we not treatises on the most minute things.

What I have said, will perhaps, appear paradoxical ; and yet it is certainly true, that, after having observed diseases, with the greatest care, I have often
found

found, that great medical writers had described all, and sometimes, much more, than I had seen. I will allow, that there are few authors, who will support this comparifon ; but they who do support it, render our Experience the lefs neceffary.

The detail of a chain of events, that are well analysed, is often much more inſtructive, than the view of the things themſelves. Every man has not the capacity of diſtinguiſhing a train of phenomena, with any order. The appearance of complication, ſurprizes us; and the mind, inſtead of conſidering the matter with tranquility, is diſcompoſed. Sometimes it happens, that a ſingle phenomenon ſtrikes a ſuperficial mind ſo forcibly, that it is no longer able to fix itſelf on the other ſigns ; or at leaſt, to diſtinguiſh them properly. In ſuch a ſituation, a perſon cannot be ſaid to ſee ; he is, at the moſt, a looker-on.

A compleat inſtruction from books, is, therefore, in many caſes, to be preferred to that we can derive imperfectly from the inſpection of a thing itſelf. It is certain, that they who have ſeen, knowing, at the ſame time, the cauſes of a diſeaſe, always lead us to the truth, by the eaſieſt and ſhorteſt way. The habit of ſeeing, in the ſame manner, becomes, with us, after a certain time, as with them, a kind of natural talent, which leads us at once to the deſired end. Lord Bacon, very juſtly conſidered the true deſtination, and the eſſential utility of the ſciences, as conſiſting in the abbreviation of the long and complicated channel of Experience. He was perſuaded, that ſuch an abridgement would remove the complaints, which have been ſo inceſſantly made, againſt the
length

length of the art, and the shortness of human life. It is by generalizing fundamental truths, that we can alone, attain such an abbreviation; or rather, as M D'Alembert says, by establishing the principles of what we know, with certainty, in drawing together general and fundamental truths, into one point of view; in referring the parts of each particular science to their principal head; and in avoiding, in this analysis, that air of minuteness, which takes the branches by the tops. It will be likewise necessary to avoid that pretended genius, which, employing itself on the universality of things, misses and confuses the whole; by aiming at including and abridging every thing.

The art of establishing general rules, is a talent peculiar to great men, and is the foundation of true Experience. This rare talent is not less the result of an happy natural capacity, than of the united efforts of habit and reflection. It was, perhaps, by a sort of chance, that Newton caught a glimpse of the generality of his famous principle in the calculations of Descartes; and it is probable, that he had applied it without much attending to it, long before he felt the whole of its extent and generality. The same thing may be said of the great principles of Hippocrates. It was, certainly, to a happiness of genius, that he owed the generality of his maxims. Boerhaave, who had seen much less than he had, does not scruple to own, that his aphorisms are much inferior to those of Hippocrates. The integrity of Boerhaave, is truly to be applauded on this occasion.

Notwithstanding what we have said, it must be agreed, that a long habit of seeing, assisted by a genius,

nus, superior to that of ordinary men; and by a mind, attached wholly to truth, will easily enable us to feel the weight of general principles, that are more established, although we ourselves may not be sufficiently acute to generalize from particular observations. There are persons who are formed, as it were, for the following of others, and who will execute a design very well, although they never could have invented it. We every day see a military man do wonders with a handful of soldiers, if he is under the command of a skilful general; whereas, at the head of an army, he would, perhaps, be infallibly routed, if left to himself.

The knowledge of others, may, therefore, influence our Experience, in different ways; and it is usually our natural talents, which determine its advantages. As every thing in nature, is capable of being referred to certain bounds or affinities; so, it is not strange, that the Experience of former ages, should become more or less advantageous, according to the faculties of each individual. If this indisputable principle was not too much overlooked, we should not so often see men, with weak heads, pretending, after thirty years practice, to have more Experience, than a young physician, to whom nature has given superior faculties. These old men, seem to have been born only to see the rising and setting of the sun.

It is true, that science, without practice, is insufficient; but a blind practice, has a greater inconvenience, by being dangerous. It is right to unite both these, by studying, not only books, but men; and thus interrogating the dead and the living: but such

an interrogation, is not the work of a confined genius; much less of one, who is not born to be the disciple of ordinary men.

The Experience of others, will furnish us with rules for our own conduct, only in proportion, as we shall know how to estimate the conduct of those, whose works we read. Very often, they only tell us what they did; and they were right to do this. But we ought to inquire of ourselves, what we would do in a similar case. To know how to put this question, with a knowledge of the cause, at the same time, will be already to have learnt much. This, however, is not enough; we must know how to answer it: without being able to do this, we shall never see clearly what we ought to do; because we cannot say, why these authors acted in such or such a way. Their errors, which it behoves us to avoid, will be so many rocks, against which we shall be liable to be foundered, in similar cases; and never shall we be able to reap, with a successful hand, the harvest they have provided for us, if we are not, at the same time, capable of appropriating to ourselves the crop. Their success, will, even sometimes, be to us, the occasion of error; and their learning, will serve only to bewilder us. Like the seaman, the physician will often find himself in straits, which only great masters will be able to pass. Sometimes they have succeeded in the passage, only by the favour of some very happy circumstances; and those circumstances will be unknown to us. We must learn, then, to distinguish, in their writings, those things, which they did not think it their duty to hand down to us; because our sagacity, only can lead us to suggest them. The erudition, knowledge, and Ex-
perience

perience of others, will, therefore, avail us but little, in those cases, which are, by no means, uncommon ones, without the penetration and genius, which help to form the sagacious man.

Although the Experience of former ages often surpasses our own, we are not, however, to suppose, that antiquity has said every thing. It is an error, to imagine that we are unable, now-a-days, to think for ourselves, and see, at the same time, what was seen formerly.

Nature is invariable in the species she has determined, notwithstanding what some modern writers may have said on the subject. Man, has therefore, even now, a right to say to the ancients, that they were deceived; as Hippocrates formerly said to his predecessors. The knowledge of others, is to be received, only as it happens to be true. *Amicus Plato, sed magis amica veritas*; and it is only by this title, that the Experience of others, ought to be respected by us; or that we can be able to draw from it, a real advantage to ourselves.

The great point will be, as we have already observed, to take things according to their just value. It is nature which determines this; and the observations of others, will be very useful to us, in this respect; but there will, occasionally, be much for us, either to add or retrench. Too often, much is attributed to the nature of things, which depends only on our manner of viewing them. Even the most instructed physicians, often disagree about what ought to be understood by nature.

As all the reflections in this work refer to the knowledge of nature, I shall conclude this chapter, with some observations, which will have their use, should they only furnish occasion for reflection on the assertions I propose to examine. If it is dangerous, as Galen said, to attach ourselves obstinately to opinions, which afford no solid proofs; how much more so is it, to consider as decisive, that which affords only doubt and uncertainty. Therefore, to take a single reflection from an author, and then to make him say, whatever we ourselves believe, without conciliating this thought, with what he may have opposed to it, in another part of his works, is at once to deceive ourselves, and our readers. Such, however, is the conduct, that certain writers every day pursue, with a view of supporting their own opinions.

What are we to understand by the word, Nature, taken in its limited sense, as relating to the human body?

According to the celebrated Sauvages, Nature, or the efforts of nature, are the soul which exercises its efforts upon the body, for the preservation of the individual. Stahl has been reproached, for having ascribed too much to the soul; but they who have done this, either have never read his works, or did not understand them.

The soul, according to Stahl, is a being, purely material; or rather, he admitted no soul; only the vital principle of an organized body. This proves, that his meaning has not always been understood.

Sauvages,

Sauvages, on the other hand, considered the soul as being altogether spiritual; it is his opinion, that we shall follow, in order to examine his hypothesis. Sauvages reclines himself on the authority of Galen; perhaps, says he, even Galen has granted too much to the soul. It is certain, however, from the avowal of Galen, himself, that he understood by the words, nature or soul, a certain innate heat, which he terms a substance, moveable of itself, and which is always in motion. He confesses, likewise, that he sees nothing probable, as to the substance of the soul. Sometimes he calls it simply, Nature; sometimes, an emanation of the universal soul, which animates the universe. He supposes, too, that the soul, which forms the *foetus*, is different from that which is contained within the *foetus*. But here he contradicts himself, without hesitation, when he says, that the soul, which puts all our parts into motion, is the same as that which formed us: while, at the same time, he assures us, that he knows nothing of the efficient cause which forms the *foetus*. What answer can we give to these different conclusions? I do not undertake, said Fernelius, to reconcile all the passages, in which Galen openly contradicts himself,

Sauvages, persuaded of the spirituality of the soul, surely did wrong, to have recourse to such contradictory authority, to prove his hypothesis. Cardanus, therefore, saw the matter more clearly than Sauvages has done; when he assures us, that we cannot absolutely suppose, that Galen believed the immortality of the soul. So, that what Galen understood by the word; *nature*, would tend, altogether, to destroy the hypothesis of Sauvages. That the soul suffers from

the sickness of the body, is a natural supposition, and what ought to be: but, to imagine that the soul finds out, and employs, all possible means to avoid or dissipate danger, like a good practitioner, is, surely, not a reasonable conclusion; nor do the premises allow us to favour it, there being a great number of intermediate propositions, which can never be demonstrated. It seems to be natural to say, that the union of the soul with the body, constitutes what may be called actual life; and that, mechanism is the principle of all the efforts which the sick body makes to remove danger. The cause may be equally well conceived, by saying, that it is the actual determination of the sick body, which determines these efforts; and, without using the term, *Pseudo mechanici*, Sauvages would have done well to have suspended his judgment of operations, which may be referred to simple organization.

May we not simply understand by the word *nature*, the actual vital power of a living organized body, a force, which has, for its remote cause, the union of the soul with the body; and for its proximate cause, the nervous fluid? This opinion is clear, whatever the nature of the nervous fluid may be.

It will be agreed, that the body is subject to the empire of the soul, in all the motions we commonly stile *voluntary*; and on the other hand, that the soul seems to be subordinate to the body, in all those motions, in which she is in a passive state. Daily experience will prove the truth of all this, to him who does not mistake words for things.

As we know of no other reason for the union of the soul and body, but the will of the CREATOR, we are dispensed from making any inquiries on this head. It will be more interesting, to investigate the manner, in which nature endeavours to preserve the machine in a sick state. Physiology teaches us, that the ordinary vital motions, are destined to keep up, in an equal manner, the determinations, which take place in a state of health. On the least interruption, whether it be in the solids or fluids, this harmony is impaired, and it is always at the expence of one part, that another acquires more strength and vigour, as is proved by Experience. It is, therefore, only by some extraordinary movements, that the living machine is enabled to recover its healthy state. This law is as invariable in brutes, as it is in man: it is even to be perceived in vegetables. There are plants, the roots of which avoid the neighbourhood of some other plant, by changing the direction in which they have been placed. I, myself, have seen this happen. If they cannot effect this, they wither and die, after having exerted all their efforts. If the changes in plants are slow, it is because the fluids, which form the principle of vegetation, are circulated with extreme slowness; whereas, in the animal body, the fluids being moved on very rapidly, must necessarily affect the machine with violence, the moment any morbid or offensive matter exerts its influence on the nervous system.

Hence, the violent affection, either particular or general, of the whole body, and the prostration which follows, and which is proportioned to these particular or general motions. This is the way in which nature

ture acts for the preservation of the animal. There is, therefore, no occasion to have recourse to the soul, to explain these operations.

It will be said, that nature, in her motions, frequently tends to the destruction of herself. This objection effectually destroys the other hypothesis, and confirms that which I have offered; because, if by nature, we are to understand the intellectual principle, which necessarily watches over the preservation of the body, it would be to contradict one-self, to say this, after having laid it down as a principle, that the soul always had such a tendency; whereas, by referring all this violence of motion to simple organization, we are no longer surprized to see an organized body destroy itself, by the mechanical powers which it derives wholly from itself. This destruction will be occasioned by an excess in the motion of the nervous fluid, which will give too much action to particular parts. We see this often proved in the violent spasms of some of the muscles, the stiffness of which sometimes continues two or three days after death.

Nature aims, however, at freeing herself from the constraint she labours under; but one part acting only at the expence of another, a total ruin of the whole, must necessarily follow, if this increased action continues long to surpass the natural powers of the organs; and it is in this manner that nature is overcome, by the sudden failure of her own powers, all of which she employed in a very short space of time.

In this hypothesis, the re-action of the soul on the body, when the body acts on it, is not denied. But
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we are not attending, however, to the motions which depend either on the superior or inferior faculties of the soul; because the soul would remove the danger, before it became extreme, if these motions depended on her. It is certain that she does not do this. When the machine appears to be in a declining state, the soul, so far from shewing any greater activity, seems to become more languid and inert; and unless art is called in to re-animate the action of the organs, and even force them to some irregular motion, the patient dies.

It would be better to banish from physic, all words void of meaning, than to make them the basis of a ridiculous hypothesis. Let any one, who is disposed so to do; object to the consequences which arise often from fear, joy, anger, and the other passions of the mind, and which produce fevers, sudden death, languor, phrenzy, &c. I am disposed to answer to such a one, that all authors, without exception, who have undertaken to describe to us diseases of the mind, and the affections they produced in the body, have rather pictured to us the diseased state of their own minds, or their own melancholy, than enabled us to see clearly the proximate causes of these singular complaints. I will add too, that the way to tire out the reader, is to attempt to say every thing; and that to pretend to explain the immediate causes of these diseases, would be an absurdity, equal to that of those who pretend to explain them by the direct action of the soul on the body. There are certain things which a man may not be acquainted with, and yet not be ignorant; because it is impossible to know them. We, therefore, need
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not blush to be as ignorant as our masters; when, like them, we have only bad reasons to give.

I believe it will be acknowledged, that many great men have been of our way of thinking. We do not say this, because we are biased by authority; though it claims a certain respect, when we really cannot see more clearly ourselves, or when contrary opinions have nothing which can support them. I cannot avoid adding the following quotation, from the illustrious ELLER.

“ Without concerning myself, as to the various
 “ opinions of authors, on the word *nature*, I will
 “ content myself with considering the phenomena,
 “ as they present themselves; and as they are found-
 “ ed, not only on the structure of our body, but on
 “ the functions of its several parts, setting aside every
 “ vague or ambiguous term.

“ They who are acquainted with the structure of
 “ the body, are not ignorant of the intimate connec-
 “ tion there is between the brain, the heart, and the
 “ lungs, as well in the beginning, as in the continu-
 “ ance, of the motion, which constitutes the vital
 “ functions, or rather, the life of man.

“ It is by this wonderful circulatory motion, that
 “ the heart, by the means of respiration, impels the
 “ blood towards the brain, where the secretion of a
 “ nervous fluid takes place; and the brain, in its turn,
 “ supplies the heart with this fluid; and thus the ac-
 “ tion of the heart is supported without interruption,
 “ being

“ being animated by this constant reinforcement
 “ of the nervous fluid. Thus it is, that the vital
 “ actions are performed; and all this, without any
 “ determination on the part of the soul, so long as
 “ the animal lives.

“ From this vital, circulatory motion, which is
 “ composed of the functions of the heart, lungs,
 “ and brain, the functions of the other parts are
 “ seen to proceed; for by means of the heart’s
 “ motion, the respiration and the influx of the ner-
 “ vous fluid, the blood is carried towards the vis-
 “ cera, that are destined for chylification and fan-
 “ guification; and by this continual renewal of
 “ blood, the losses that our fluids sustain are re-
 “ paired, and life is supported. The functions
 “ of the viscera, destined for these purposes, are
 “ named, by physiologists, the *natural functions*.

“ From these considerations, it is easy to con-
 “ ceive, that, as in the healthy and natural state,
 “ the abdominal viscera, intended for chylifica-
 “ tion, extract, from the aliment, the chyle neces-
 “ sary to form the blood, and afterwards throw
 “ off by the intestines, the kidneys, and the skin,
 “ that which is superfluous; so, in a diseased
 “ state, the morbid principle, which occasions the
 “ disease, is submitted to the same action of these
 “ viscera, which still subsists more or less perfectly.
 “ And hence this noxious principle, which resists
 “ the motion of the fluids, or irritates the solids
 “ by its acrimony, is likewise liable to be changed,
 “ and corrected in the same manner by the powers
 “ of the vital and natural functions, so as at length

“ to be fitted for a critical evacuation through the
 “ channel of some of the secretions. If this cri-
 “ tical evacuation, or the whole of these opera-
 “ tions, are to be attributed to nature, I think,
 “ that the definition of the word nature, in this
 “ sense, ought to be that of a power, natural to the
 “ human body; which, by means of the circulation
 “ of the blood (and this includes the vital and na-
 “ tural functions), is able to prepare and assimilate
 “ to our body the nutritious part of our aliment,
 “ and carry off from the mass of blood, what is
 “ foreign or noxious to it; and this, sooner or later,
 “ according to the properties and character of the
 “ offending matter.

“ Such an explanation sufficiently proves, that
 “ the Creator has given marks of his extreme Wis-
 “ dom, in not having submitted to the direction of
 “ our understanding and will, our vital and natu-
 “ ral functions; lest man, when borne away by
 “ his passions, should suspend these functions at
 “ his pleasure, and thus put a stop to his life; and
 “ this would be very easy, if these functions were
 “ influenced by the soul, as is the case with the
 “ animal functions.” pag. 38-40.

By considering nature in this point of view, it is
 easy to see how such a definition, may be applied to
 the discoveries of those great masters in physic, who
 seem to have referred her influence to such a me-
 chanism.

Is it not a manifest absurdity, to pretend to have
 any influence on a spiritual principle, by means of
 reme-

remedies? and will the observations of others, be of any utility to our practice, if we once forget the mechanism of our organization? In good truth, I cannot conceive, how men of sense can adopt such frivolous ideas; while the nature of the soul, would, of itself, be an inexplicable ænigma, without the revelation, which informs us what we are to think of it, according to the respectable system of religion. But religion has never pretended to form physicians; and the learned Sauvages might have been an indifferent metaphysician, an able calculator, and a good christian, without abusing Luther, whose opinions ought not to affect us, when they are improperly founded.



B O O K III.

*Of the Genius for Observation, and the
Influence it has on Experience.*

C H A P. I.

Of the Genius for Observation in General.

BY a genius for observation, I mean an aptitude for seeing each object in its true light, and distinguishing what there is in it more or less useful. Observation itself results from the application of such a talent.

As the phenomena of things are infinitely diversified, their causes will be so likewise. Some of these causes are derived from the essence of the thing itself; and these are the most important ones, because they lead us, at once to the knowledge of the whole. Others seem to arise from circumstances that are apparently accidental, and these become of importance only by being well connected. Lastly, there are others, which are so little essential, that they seem to
inform

inform us of nothing more than their actual reality, whether it be permanent, or only fugitive.

An aptitude for observation, is, therefore, nothing more than a ready conception of the affinities of things, and of the signs which point out to us their order and combination ; by noticing this order, and these affinities, we form, as it were, without thinking of it, a certain connexion between individual truths. This connexion is felt, the moment we perceive some affinity in things. It is not possible to represent to one-self how one thing differs essentially from another, without comparing them together ; and it is by this comparison, that we establish their connexion.

The perceptions of our senses, would be but of little use, if the mind remained in a state of inactivity, when the senses are affected. Even brutes seem to imitate us in this respect. The soul would be rich in images, but very barren in ideas. All our learning would be limited to the knowledge of individual things. We are obliged, as it were, in spite of ourselves, to have a certain activity of mind, whenever we see ; but this activity should not be barely confined to the perception of individual things, we ought to compare them with every other which may resemble them ; and to learn how to distinguish, with readiness, all the marks of resemblance or dissimilitude.

Our perceptions will be constantly individual perceptions, if we do not accustom ourselves to compare many of them at a time, to perceive their general order and connexion, and discover, as it were, at one glance,

glance, all their varieties; collect what is irregular, distinguish the differences of each, and connect together those, whose affinity will permit it. By such a method, we shall be enabled to determine, that such a thing is, or will become such. And this is truly the only channel, through which we can procure the different degrees of clearness, extent, and perfection, in our first ideas, and in the reflections which follow them.

Be it as it will, the genius for observation is derived, in a great measure, from a certain natural aptitude; in consequence of which, we are affected in a lively manner by every thing that presents itself to the mind, and attend equally to every thing that makes itself felt in these moments. It is from this talent, that is derived a certain freedom of the mind, which enables the soul to perceive, distinguish, and understand, readily, every thing that is offered to it; in the same manner as good eyes see readily, clearly, and determinately, without any one object's being confounded with those which are near it; I say, that this delicate feeling gives freedom to the mind, because, not being obliged to stop at intermediate objects, or sensations, it seizes, without hesitation, and at once, all that the senses transmit to it, and finds itself, at the same time, capable of examining all that is interesting.

The only way to discover all that is to be found in an object, is to examine it in all its parts, and to decompose it until it becomes so simple, that it cannot be analysed any farther; but this analysis has its boundaries. Too fine and delicate a feeling, would
lead

lead only to fruitless observations. Every object has its fixed and determined affinities, beyond which it can no longer afford any comparison; and therefore, to go beyond these bounds, in an analysis, would be to mistake or destroy the whole.

This too great delicacy, leads us, too often, from things to words. He, who is too minute in his observations without doubt, often sees things which are not perceived by others; but, at the same time, he is often in danger of mistaking his own ideas for reality. He resembles, in this, people, who look from the top of a high tower, and who almost always direct their eyes to a distance, without perceiving that which is near them, and often of greater consequence. Nothing, therefore, is more averse to the formation of ideas, than this refinement, which always strikes the imagination, without interesting the understanding. I can allow only Hudibras and Ralpho, to subtilize in analyses similar to those they indulged in, on the internal light of the Puritans; or to the Arabian physician, Alkindus, to determine the powers of medicines, by the rules of arithmetic and music. What would Aristophanes have said, if he had seen the moderns analysing the blood of a flea!

Next to this refined feeling we have been speaking of, but fixed within proper bounds, attention may be considered as contributing much to the genius of observation. It is a lens, which being applied to the different parts of an object, enables us to remark other parts, which we should not distinguish without its assistance. The more we exercise our attention, the
more

more shall we discover of every object. A botanist sees in a plant, more than other men do. He observes in it, what ought to be seen; whereas, they know nothing even of what they do see. The same thing may be said of a good moralist: he knows how to distinguish man in all the ranks of civil life; and he determines the characters of men, as the botanist does those of plants, by marks derived from nature; and often there seems to be only a slight shade, which prevents our confounding them.

On the other hand, that which seems to other men to constitute an essential difference, is, in the eyes of these observers, simply, a variable quantity; which, after many reductions, becomes metamorphosed, and disappears, as it were, in their analysis. It is the constant quantity they consider; but a man must have a certain degree of judgment to distinguish this quantity.

Our attention becomes more perfect, by the advantages we derive from a habit of observing. The mind, satisfied with its former discoveries, becomes always more desirous of improvement, in proportion, as it extends its knowledge; and it fixes itself the more willingly on a new object, in proportion, as those, with which it is already acquainted, have interested it. Whereas, the man of simple curiosity, who seeks to see only for the sake of seeing, is satisfied, when his eyes have slightly passed from one object to another. This person desires only to say, 'I have seen a thing:' the other aims at knowing it.

The attentive consideration, which, at the time we represent to ourselves an object, seems to occupy all our soul, ought to be kept up by the fire of a secret passion. The powerful desire of perfecting ourselves is this fire, and it finds its proper nourishment within itself; it seizes every thing around it, and is never extinguished, even in the moments, when the genius for observation, is the least occupied.

Although the love of truth, is, alone, the predominant passion of a man, animated by a genius of this kind; it will be right to avoid the being often with men of weak heads. The too frequent conversation of these people, sometimes brings us down to a level with them, when we are the least aware of it. By thinking with them, we insensibly accustom ourselves to think as they do. A bad taste, once rendered familiar, soon becomes the only one we have; because we see it in every thing.

Men of a narrow genius, often see, in certain objects, many things, which a superior genius passes over without observing them; but these things are usually such as a man of refined genius should avoid seeing. This minuteness seems to be the lot of little minds. Women have, on a thousand occasions, a finer eye than the men; but it is for things that are made to be seen only by women. A mind, formed for more elevated views, ought to pass over these objects; because it is not destined to dwell on such minutiae. Sometimes, however, it is right to attend to them: but it is by referring every thing to general heads, that those particulars are to be considered; and ordinary minds, who are incessantly employed about

them, never do this. In general, the mechanic sees no farther than the ends of his fingers and tools.

It follows from what we have said, that the genius for observation, is the lot, neither of too lively, nor of too slow an understanding. They, who have too lively an imagination, or more imagination than judgment, see many things at once. The too great vivacity, with which they perceive things, renders their sensations a confused perception, which gives them no clear, and precise idea. This seems to be the reason why we sometimes see a powerful imagination accompanied by an undetermined and inconstant taste; because the imagination, has, at least, as much share in the taste, as the judgment. On the other hand, they who have much judgment, without imagination, are, in general, longer before they see; but they determine, with more precision, the merits of an observation, although they do not so soon make it. They will, perhaps, perceive the play, and efforts of the passions, more clearly, than a man of too lively a genius, who feels them, without being able to distinguish them properly: But they will not feel that involuntary determination, which leads the mind to every thing that surrounds it, without its shewing any thing fixed and distinct. These men of slow judgment, see only that which they have a strong desire to see.

In general, with either too much coolness, or too much ardor, we see all objects in a contrary sense; We see, quickly, and we distinguish what we see, when, with a suitable share of imagination, and judgment, the latter directs the other to the object we are

to examine. It is certain, that the highest degree of genius for observation, is to be found in a lively head, that is capable, at the same time, of profound and continued attention.

The mind cannot fix itself, too long a time, on a single object; because it is naturally active, and, of course, impatient. Habit will enable a man, who possesses a talent for observation, to see things gradually, more and more readily. The best observer, will sometimes have occasion to fix his attention as long on an object, as a man of more confined genius; because, by being more capable of distinguishing the different parts of the object, he will perceive many things that will escape the notice of the other, who contents himself with seeing that which presents itself; and, therefore, knows less.

Although we may gradually acquire a habit of seeing, with the mind's eye, as with the eyes of the body; yet, the genius for observation, sometimes appears like a true instinct. Without any habitual faculty, there are persons, who often attach themselves, at once, to the instructive parts of an object, and comprehend them as readily. I was curious one day, to know what opinion a lady of my acquaintance would give me, on an interesting, historical picture, by an Italian master; the pathetic of which, was not very apparent to common eyes. This lady, was affected at the first glance. I required nothing more to be assured of her taste and sensibility; and yet, she had no knowledge in painting. It is by this innate feeling, that we sometimes judge of the works of poets, and painters, when there is not so much question of

the manner in which they are executed, as of their effects. It is this kind of sensibility, which renders the mind as penetrating, as the eyes of a Lieberkühn, who could distinguish the satellites of Jupiter without a glass.

Few people observe, properly, even when they mean to do it; and the result of their observation is a mere vapor, which is dissipated, the moment we inquire of them what they have seen, or what they fancied they felt. It would have required the delicacy of Roman ears, to have said to Virgil, that he did not speak like a Roman: and yet; we every day see persons who are in raptures at the sight of any work of art; at the hearing of a tragedy; or a discourse; or any work of genius. To hear them, it would seem as if they felt, and understood, even the most minute ideas of the author; the least shade of the artist's or the writer's genius, is a highly finished piece in their eyes. If we proceed to ask the order and connexion of the thoughts, or of the works, with which they seem to be so affected, we see, at once, that they have given credit to the author for much; but have truly observed but little, and have appropriated to themselves, no part of his art or genius.

It is easy to discover the genius for observation of each individual, by observing how he is affected at the theatre; or at the sight of a picture; or a piece of mechanism, &c.—One person will see, at the theatre, only the dresses of the actors; another, notices the decorations of the theatre; others attach themselves to the attitudes, and gestures of the performers. All these

these spectators, directed in their taste by some particular passion, go to the theatre to flatter that passion; and return home again, with a persuasion, that they have well seen, and well understood the piece. It is in this way, that the generality of men act, in all the circumstances of their life, and in every thing they see.

As invention is peculiar only to true genius, so it is true genius, alone, that can judge of the merit of invention. Neither poetry, nor painting, are confined to poets and painters: they are talents, which may be remarked in all men of genius; and consist in that exquisite sensibility, which leads us to the knowledge and imitation of nature. No master can be capable of instructing him, to whom nature has refused this gift. Nicomachus said to a spectator, who could discover nothing beautiful in a certain picture of Apelles: "*Take, then, my eyes, and see.*"

In a picture, which represents the actions of men, there is something anterior to the touches of the pencil; to the proportion of the parts; to the distribution of light and shade, or the harmony of the colours; this something can be seen and felt, only by the sensibility we have mentioned. They who have read the sublime reflections of the great Lord Shaftesbury, on the picture of the judgment of Hercules, will acknowledge, that a true painter of history, ought to possess this creative talent, in the highest degree. There can be no doubt, from the observations he has left us in his *Characteristics*, but that the noble writer himself possessed, in a superior manner, this true genius for observation.

Ordinary

Ordinary minds, never observe this creative genius, in the works of a painter; they attach themselves, altogether to the mechanism of a picture. A single defect, perhaps, will strike them; but they will be incapable of feeling the boldness of the execution. A servile regularity will please them; while the masterly strokes of the pencil, one of which, is often sufficient to express several of the passions at once, will fail to affect them, and will even escape their attention. Hogarth, who perceived that men in general, were attached only to trifles, said, in allusion to this, that all were competent judges of painting, excepting true connoisseurs.

It is, perhaps, as difficult, in these days, to judge of the true merits of a picture, or a statue, as it was to the Greeks, and Romans, to execute those masterly performances, which still excite the wonder of the true connoisseur. In the opinion of Winkelmann, the genius of the ancients, is to be felt only by diving deep into their works; whereas, in these times, we make a display of all we know and possess; like a merchant, who is on the verge of bankruptcy. It requires a genius like that of a Moses, a Winkelmann, or a Sulzer, to determine all the marks of the beautiful, from its lowest degrees, to its most sublime heights, in the works of invention.

The genius for observation, carried to the highest degree in the arts, borders on the marvellous. Raphael, was at first, only a very moderate painter, till he got, one day, by stealth, into the chapel of Pope Sixtus; and there, the moment he beheld the representation of the Eternal Father, as painted by the hand
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of the divine Michael Angelo he was so forcibly struck with the grandeur of the painter's idea, that he at once felt and adopted the whole of it; and, attaining, afterwards, the same height of perfection, gave the same degree of majesty, and divinity, to his own representations of the Eternal Father, which had, till that time, been very imperfect ones.

These same reflections, may be applied to the genius for observation, that is required in social life. I often have occasion to remark, that a man, who cannot feel the powers of a moral picture, or the pencil of Hogarth, is equally insensible to the characters of Theophrastus, or La Bruyere.

It is this same feeling, which sometimes marks out, in a young man, the first dawning of the most sublime talents. This sensibility, is to the human mind, what the principle, which forms, as it were, the soul of vegetation, is to plants. In proportion, as its energy unfolds itself, these dawnings acquire additional lustre; and, at length appear, with all the splendor, which may be expected from them; but it requires no little delicacy of sentiment, to perceive these first signs of genius.

Dubos lays it down as a mark of genius, in young people, if, in the ordinary studies of youth, they remain behind hand; while they advance rapidly in any particular art, for which they seem to have been destined by nature. If so many fine geniusses are neglected by their masters, it is because those masters, who have learned rather to speak, than to think, are, in general, incapable of discovering the temper of a
genius,

genius, which is so superior to their own. Accustomed to a train of life, that is purely mechanical, never will they suspect, that a machine, can be animated by any other genius, than by that which they imagine themselves to possess, and which is always, in their opinion, the most accomplished. So, that a young person, who does not appear to them to have the same turn of mind, will be considered as a stupid fellow, who merits no attention. No man ever knew better how to discern, and give an advantageous turn to talents, than Mécenas and Colbert; but these great men were not indebted to such formal sophists, for this happy discernment. A Kleinjogg, ornamented humanity, without being attended to; till a Hirtzel saw, and pointed out his merit, and thus rendered him immortal.

There are people of a certain stamp, who see always in a false light. If they fix their attention on children, they mistake little follies and impertinence, for the marks of a future grandeur of mind. A readiness to calumniate for judgment; great talking, for wit; and hypocrisy, for models of future probity, and religion. Men of clear and cool heads, but who have had a servile education, are too apt to consider a decisive turn for the great, the beautiful, and the sublime, as mere giddiness, and eccentricity. A love of independence, and a turn for ambition, together with a contempt for every thing that is low, is, in their eyes, an unpardonable pride. Stupid people, mistake all this for folly. Every one imagines he is right in his opinion; because every man sees after his own manner. Pythagoras, said an ancient philosopher, looks at the sun very differently from Anaxagoras. The
former

former carries his eyes to it, like a God ; while the latter looks up to it, as unfeelingly as a stone would do.

Others see only half a thing ; and therefore, never see enough. They confine themselves to particular parts, and thus often miss the whole. The Madonna of Raphael, would, in the eyes of these people, be a pretty face ; Montesquieu, a wit ; and Haller, a good dissector, and a great botanist ; but nothing more.

The talent for observation, is as valuable, in moral life, as in the arts. Socrates possessed a genius for observing men in so high a degree, that, on the most trying occasions, he immediately formed in his mind, a ready, and pretty just combination of ideas, which enabled him to foretell what might be expected from any man. He formed his opinion of men, says Diderot, as men do of works of genius ; by their feeling.

Theory, which is so despised by the vulgar, and so often attacked by men of shallow erudition, is, or ought to be, founded wholly on observations made with such a genius ; and which, in a thousand circumstances, will be superior to a blind practice. Even in morality, theory will be found to be true, only as its operations are founded on the analysis of the human heart. Although the generality of mankind, are influenced less by reflection, than by habit ; and although they do a thing, only because they have seen it done, or have been told to do it : there is nevertheless, a leading principle, which is pretty generally to be distinguished in all their actions. This principle,

ple, becomes different, in different situations; and it is, therefore, by these, that it is to be estimated. At one time, it is convenience; at another, self-love; now and then, envy; sometimes, hatred; and on some occasions, though rarely, it will be friendship. Each of these passions will predominate in its turn. History, to the eye of the philosopher, is nothing more than a picture of all these circumstances.

The difference we observe between actions and words, leads directly to the infinite difference there is between what a man really is, and what he wishes to appear to be. We must learn to know things from their phenomena, that we may be, one day or other, enabled to foresee phenomena, from what we know of the things themselves. In the same manner, we should judge of the hearts of men, by their actions, that we may learn to foresee their actions, by our knowledge of the heart. Each action has its leading cause, as we have just now seen. It is by frequently observing the actors, their ideas, their passions, their virtues, their views, their interests, the different situations, in which they are placed; and, by distinguishing all these with propriety, discovering the affinities of each, and then combining such of them as allow of being connected together, that we are enabled to specify these causes, and explain to ourselves, these actions. It sometimes happens, that society is long a dupe to some person, whose true disposition is known only to some skilful observer, who sees him, and says nothing; at length, the actor himself drops the mask, and appears such as he really is, to the world. It is remarkable, that it is often by benevolence, that a
man

man disguises himself the most securely, and during the greatest length of time.

History, in its principal point of view, is one of the most advantageous means of increasing our moral knowledge. If we turn over the history of former ages, it should be with a view to form a better knowledge of our contemporaries, and to judge more soundly of their disposition and conduct. As we see amongst the men with whom we live only an infinitely small part of the world, it is history only which can lead us to the knowledge of the world at large; and by this method, we avoid forming our judgement of the whole, from individuals; or of nations, from one. We consider as generally true, and at the same time as peculiar to man, only that which has been regarded as such in all ages, under the influence of a multiplicity of infinite causes. Hence it is, that the comparison of things past with things present, is one of the best ways of observing men because it teaches us to know them immediately by their actions.

But there are few persons who are capable of being benefited by the reading of history. This is owing first, to the errors of historians themselves. Credulity, party spirit, and above all, a want of that truly philosophical genius, which every writer ought to possess, conceal from, and cheat us, as it were, of the greater part of the events they recite. Facts are almost always less interesting to us, than their causes; and, it is in this point, in which almost all writers have been deficient. In attempting to unveil these causes, they

have always been guided too much by their imagination.

Livy was destined by nature for an orator; he was determined to be an historian. Polybius, who saw so clearly into the actions of Men, and who was so attentive to the causes of events, as well as their connexion; and, so instructed in every thing, that could be useful to him as an historian, was, however, not pleasing to Livy, who constantly alters his expressions when he has occasion to cite him.

To write history well, would seem to require the philosophical genius, and the stile of Xenophon; the descriptive pen of Sallust, and the sincerity of De Thou.

Secondly, few persons profit by reading history, for want of the necessary penetration. Without this, it will be impossible for any one to trace the designs, the means, the events, and their consequences; or to distinguish what is true, from what is only probable; and, the influence of the minutest things, on great ones. Again, no man, who is void of this penetration, can surely perceive, in any circumstance, that appears to be but of little consequence in itself, the first cause of the enslaving, or the freedom of a state, or of its rise or fall; nor will he be able to trace the progress of the arts and sciences, and commerce, and religion; and, to determine, how they were interesting to, and mutually assisted, or otherwise affected by each other.

If it were required only to learn from history, that in such and such nations, there prevail certain manners,

ners, laws, religion, commerce, &c. he, who has resided in those nations, knows all this, and yet is not the more learned on that account. It is to the spirit of all these different things, that we must direct our attention. We should aim at seeing the origin of the laws, in the real interests of a state; in the character of its inhabitants; and, in the influence, which other nations may have over them. Certain usages and laws, may render one country very happy, although the same laws and usages are by no means admissible in another.

Revolutions in a state, have constantly been determined by some internal or external causes. It is to these causes, rather than to the revolutions themselves, that we are to direct our attention. We should particularly inquire, why certain people are very happy in a country, the ancient inhabitants of which, were in the most abject slavery. But, without a genius for observation, will all this knowledge be derived from history? No: and this is the reason, why so few have read it, like Montesquieu; or written it, like Hume.

Without a talent for observation, the politician will always fail in his designs. Never will he acquire a just theory of the happiness of any state, if the most exact observations have not deeply imprinted on his mind, the character of the people; the means of executing any plans; and the obstacles that may arise, together with the causes and effects of these same obstacles. To know all that can happen to a state, *ad infinitum*; and to know, at the same time, how its happiness is to be supported; how to obviate its internal evils; to put a stop to those which are manifest; to
palliate

palliate and conceal those which are incurable; and, above all, to know how to seize the proper time, and measure, and strength, of the remedies employed; all this requires a penetration, far above that of ordinary politicians, who usually content themselves with treading in the steps of their predecessors. The statesman, who knows not the strength and the weakness of the human heart, rather from just analyses, than from hypotheses, founded on passions, badly conceived, and badly understood, will never be able to discover the designs of others, so as to convert their intentions to his own purposes. He will be equally ignorant whether a thing ought to be done publicly or secretly; he will adopt vile artifices, in preference to more dexterous measures; and, by seeing every thing, through a false medium, will do every thing badly or imperfectly; and will, on all occasions, mistake the true interests of the people.

It is on this art of seeing things clearly and readily, that the commander of an army, founds all his success. To make advantageous marches, he must begin, by observing all the advantages, and disadvantages, of a country; he must next combine together, the time, the place, the number and condition of his troops, provisions, &c. and likewise the situation of the enemy, with respect to all these circumstances: If he is to pitch his camp, or to chuse a convenient spot for an attack; a knowledge of the most minute particulars, becomes so essential to him, that a brook, a hedge, or a ditch, will be liable, very often, to decide his defeat, or his victory.

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He has not only his army to command, but likewise its marches to plan and direct; to inform himself of the enemy's motions; to foresee ambuscades, &c. On all these things, his success intimately depends. If he omits a single circumstance, in the heat of action, perhaps his army is routed. In the midst of all these difficulties, however, he ought to observe and direct every thing with coolness and tranquility. This masterly eye, which sees every thing at once, has, on many occasions, decided, not only a victory, but the fate of nations.

Hitherto, I have spoken of the genius for observation, almost wholly in a philosophical strain; because I could not possibly explain myself clearly on an abstracted term, without tracing the philosophical principles, which might lead to its true sense. Rousseau somewhere says, that it is a pity, so much philosophy should be required, to be enabled to observe once, what is seen every day.—Let us now finish this digression, and return to physic.

Science is the clue, by which the physician is enabled to penetrate into the labyrinth of nature. A learned physician is informed, before-hand, of the country he is about to visit; whereas, the ignorant empiric knows not even the ways which lead to it. The former, therefore, may be said to find nature open to his inquiries; while the latter is unable to say what he is to seek for.

No part of knowledge, will be found to be more advantageous in directing the eye of the observer, in his researches, than that of the history of physic. By
history,

history, here, I mean, what the best observers, and above all, Hippocrates, have left us, on the signs and symptoms of diseases. This knowledge, when combined with the other principles, will always instruct a physician on the phenomena of diseases, and on their connexion with, and dependence on, each other. He will see, by this method, the *physiognomy* of each disease; not, indeed, always immediately by the eyes of his body, so much as by those of his mind.

It is in this way, therefore, that a physician, guided by these two different lights; that is to say, by the principles we have established relating to causes and effects; and by the historical part, may, with confidence, present himself at the bed-side of the sick, and discover phenomena, which will escape the notice of a less enlightened man.

Attention, is, without doubt, a painful task, when we do not possess, in a high degree, the delicate feeling, and the fine masterly eye, which we have so often mentioned, as tending so much to abridge all the operations of the understanding; but, by the means of habit, this kind of readiness may be improved.

There are some people, who consider a physician as an attentive man, if he often visits his patient, and frequently stirs over, and examines, every thing that his patient voids; or if he enters into a long and learned harangue with the nurse, and stands-by, on the stools, the urine, the pulse, &c. of the patient: but neither of these is the sort of attention, which distinguishes the true observer. All these circumstances

stances may be very interesting on certain occasions; but, in general, the eye is required less than the mind. He who is incapable of observing the moral man, will never be able to know diseases. The same talent, which leads us to distinguish the diseases of the mind, brings us acquainted likewise, with those of the body: both the one and the other have their peculiar signs, and all but the man of true knowledge, will be liable to mistake them.

The true physician observes that which the empiric does not aim at seeing; the physician ought to discover all the circumstances of a disease, through the veil which covers them; he ought to know how to simplify them in their complication; to distinguish what is constant, from that which is variable; and the essential part of the disease, from that which is purely accidental: he ought, likewise, to perceive, how a disease became such as it is; and how all the circumstances attending it, from being only possible, came to be realized. All this, therefore, will depend on the penetration of the observer; and it is what he will not be always able to determine, from the signs and symptoms of the disease.

The empiric, on the other hand, requires neither this talent for observation, nor the history of diseases. As he goes, less with a view to observe what really is, than what he wishes to see; and as the disease is, in general, to be determined by the remedy he applies, he has occasion to distinguish neither the possible, nor the real, nor the probable, nor the true, nor the false. All is true, according to him; because he insists that the disease is such as he says it is. I have very lately

seen an example of this abominable practice: I was desired to visit a little boy, who had been ill during several months: I found him in bed, but without being able to lie on his back, on account of a blow, which he had received there. Having fully considered the state of the patient, I pronounced the disease to be the Rickets; and to this I adapted a method of cure. He was intrusted to a surgeon, who confined himself wholly to the application of some useless cataplasms, on a swelling which was felt in the loins. I repeated my advice; but the child's friends, not satisfied with this, called in a very ignorant fellow, who confidently asserted, that the complaint arose altogether from a vertebra's being tumefied, or displaced by the blow. He treated the little patient with so much violence, by attempting to bring about what he stiled the reduction of the vertebra, that he almost occasioned the death of the child. The impostor continued to be employed, till he compleatly exposed his own ignorance. This example will suffice: it clearly proves, that I have done well to say, that, without a true genius for observation, a man may see a great number of patients, and yet perceive but little. A real disease, is sometimes a long time before it shews itself. A slight accident very often determines it: but surely nothing can be more absurd, than to consider this accident, even though it should be a very alarming one, as the disease itself, which, at the most, is complicated with the effects of this accident. The case I have just related, may be applied to what I now say. After many inquiries, concerning the state of the child, previous to this attack, concerning his diseases, inclinations, and mode of life, I learnt from his mother, that, long before he received this
blow,

blow, he had frequently complained of pains along the spine, and of lassitude, and that she herself had been subject to *fluor albus*, both before and after the birth of this child:—her two daughters were likewise subject to the same complaint. It is well known, that the most experienced observers have proved to us, the bad effects of this complaint; and that girls, sometimes, even bring it with them into the world. All this afforded sufficient presumptive proof of the morbid state of the lymph in the child; and this, together with the pains in his back, and his sense of lassitude, led me to determine, without hesitation, the nature of his complaint. The blow might, and probably did, accelerate the progress of the disease; but this blow was to be considered only as a particular accident; and so far from viewing it as the principal disease, no curative indication could be drawn from it.

I did not, however, omit to attend to the effects of the blow. I related to the patient's friends, what I had myself seen in dissecting a man-servant, who died of a similar complaint; and I mentioned a case of the same nature, from De Haen. I compared all these different circumstances together, and imagine, that my opinion was founded on sound practice:—But it was not to true observers I was talking.

The unequal distribution of the genius for observation, is the source of disputes among physicians; and these disputes, are a pretext, with some people, for accusing the art itself. There is little to be gained by slander, says Pindar: it should be considered, however, that in this respect, its effects are of very great consequence. Hippocrates, long ago, com-
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plained, that a contempt was thrown on the art itself, which ought only to be applied to the ignorant pretenders to it.

Every man sees things in his own way ; but if every one who observes, would reason from nature, few would see after their own manner ; because we should then see things as we ought to do. Not that a talent for observation, supposes very long reasonings. Nature, who ought to be our guide on these occasions, takes always the shortest route in her operations ; and we should, therefore, follow her example in our reasoning. Hoffmann was in the right, to say, that to give up our feelings, and devote ourselves wholly to reasoning, would be a blind stupidity. No reasoning, that is not founded on nature, ought ever to be admitted. It is even required in observation, that an hypothesis should be founded, not so much on the general laws of our organization, and the general phenomena of nature, as on the actual determination, and particular conditions, which have been able to render them such ; otherwise, it is impossible to avoid error, and, of course, contempt. When Plato reproached ignorant people with caring but little for reasoning and instruction, he certainly did not mean, that reasoning should be the law of observation : it is not till after all the phenomena have been noticed, that he allows the physician to reason on the method of cure ; every disease, says he, ought to be treated according to its peculiar and particular determinations.

There are certain practitioners, who are more blameable than the empirics. The name and the
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profession of a physician, entitle a man, in some measure, to the confidence of the public. The persons I allude to, have only this title for all their knowledge. They go in boldly, loaded with receipts, and seem to console themselves, with saying, such a one knew no more than I do, and yet he was very fortunate in his practice. Nor does their reasoning extend farther. It is founded neither on nature nor experience; indeed it may be said, that these people never reason. All their ability, seems to consist in copying formulæ. A girl comes to them with chlorosis, and they give her some cooling medicine; because there is fever. A pregnant woman, complains of a retention of urine, and they give a diuretic: they are ignorant, that it is the fœtus which presses on the neck of the bladder, and that a diuretic may be fatal in such a case. These people, not only do not perceive the chain of circumstances, that occasion a disease, but they are strangers to every one of them.

Shall I say what-I think? The physician who sees all the circumstances of a disease; he who sees only a part of them, and another who sees none of them, or rather, sees only his own prejudices, must necessarily be of different opinions; and yet they will all swear by their Experience. It is in this manner, that the most opposite opinions are proved. The insensibility of the tendons and periosteum, has been disputed from Moscow, even to Ragusa: all appealed to Experience: at length, it was concluded that the tendons were sensible; because Haller was a Lutheran.

A man defends, even to his latest moments, that which he thinks he has seen, without asking himself
whether

whether he was capable of seeing. A drunken man, swears that every thing dances around him : a superstitious man, believes in magic : a little mind, dreads apparitions : all these speak from Experience, fancying, that it is from Experience they have learned all this.

The nature of diseases, the art of curing, the virtues of remedies, all these are equally decided, by the Experience of him, who knows them, and of him who does not. The physician, who has discovered the ways of nature, and who follows her, in them, every day ; and the old nurse, who is directed by this physician, both appeal alike to their Experience, and the former very properly. But, ought any one to appeal to his Experience, who does not possess a proper talent for observation ? Is it by a blind practice, with a few receipts, and many prejudices, that we see nature ?

What may not a patient be expected to think, who sees several physicians around his bed, contradicting each other in their opinions ; and yet, all equally appealing to their Experience.—This is not a rare case. Will such an unhappy patient ever believe, that physic is an art, which has its principles, and which supposes so much genius ? for it is certain, that a true genius is required, to form a good physician. He should reflect, however, that of those who are around his bed, not one is, perhaps, a man of this sort.

Impatient in their sufferings, men generally require their physicians to speak and act with certainty ;

tainty ; and there is certainty in no part of human knowledge, if we except the pure mathematics. In general, we may say, that all that the senses assure us of, all that follows from a just induction, and all that we see immediately in our ideas, is true. We are acquainted with effects with sufficient certainty, it is the causes that embarrass us: even in these, however, we are not deceived, if the effects of any cause are so known to us beforehand, that it may be determined by them. But the number of those practitioners is very small, who are able to ascertain the affinities between these effects and their causes, and who, at the same time, have a talent for applying to them, principles, drawn from the observations of great masters; and all this, because every one conceives his own opinion to be the best.

Diderot thinks it is ridiculous to say, *'the more heads, the better counsel'* ; because nothing is more common than heads ; and nothing so unusual as good advice. Was Adrian to be blamed, for causing to be inscribed on his tomb-stone, *'It was the great number of physicians that killed the emperor'* ?



C H A P. II.

Of the Impediments to the Talent for Observation.

THE finest talent for observation, may be confined, disturbed, deceived, weakened; and, in short, affected in different ways. Observation requires a free and tranquil mind, wholly devoted, however, to its object.

The mind must be divested of all passion, and prejudice, if we wish to take the position, in which we may discover the truth. We must likewise avoid the passions and prejudices of others, as much as our own. A man, who is fettered by prejudice, sees, even with the best talent for observing, only what he is willing to see, or what is pointed out to him by others. This interested, and uncandid search after truth, is the great source of all the false opinions that prevail amongst men, and of all the errors which dishonour them.

The most trifling impediments of this kind, disfigure every object; because the eyes see less than the passions themselves do. It has been said, that women read better in our physiognomies, than in their own;

own: but, perhaps, no woman will read the physiognomy of an ugly man. It is in this way, that most objects assume, in the eye of the observer, a colour and character which agree best with his predominant passion. Hypochondriacal patients, see every thing with a gloomy eye; others, are admirers, and consider every thing as grand and magnificent. Some, there are, again, who see faults in every thing, and these are in the greatest number: few people are affected by the beautiful; it is the brilliant that most commonly strikes them, and this, because a false taste is so prevalent. It is this false taste, which, in the opinion of Lord Shaftesbury, throws itself upon that which immediately strikes the senses, rather than on that which might be likely to interest the understanding; after a proper examination: whereas, a person, who possesses a true taste drawn from nature; and, perceiving what he feels within himself, is at once struck with the noble simplicity, and even dignity of a truly great object: like a creative statuary, who sees, in half a line of Homer, the statue of Jupiter, which he goes and executes, from this hint.

The execrable Jansenist, who wrote against the spirit of laws, thought he had done enough to overthrow the credit of the author, by reproaching him with having said nothing in his work, on the subjects of original sin and grace. Montesquieu was satisfied with answering, that a man, who aims at attacking all the parts of a book, and who has only one predominant idea, can be compared only to the village-curate, who was shewn the moon, through a telescope; and, who saw in the glass, only the steeple of his own parish-church.

The passions seem to clog the genius for observation, even more than our prejudices. These last, do, sometimes, still leave some avenues open to precept and example. There is, perhaps, no prejudice, which has sufficient power, so to fix the mind on an object, that it shall always be seen in the same point of view. A reflection, following close after some favourable event, opens the eyes, and the phantom disappears; and this the more readily, if the prejudice does not depend on something that is mysterious. This is what we see happen every day. But the passions block up, as it were, all the avenues to the soul; they are deeply rooted in the heart, and seem to possess the whole man. Resistance, and the ordinary impediments, serve only to strengthen the influence of a passion, by irritating it.

As every passion, without exception, is constantly founded on a blind love of one-self, it is much more difficult to renounce this, than to give up a prejudice. To throw off the latter, a man need only say, "*I am mistaken*": whereas, to lay aside a passion, he must necessarily humiliate himself. Every prejudice, however, is liable to become a passion, especially if it is authorized by example and time; because, man in general, is rather an animal of habit, than a being that reflects. But when once the prejudices are established into passions, a man becomes inaccessible. This is the reason, why men are so capable of serving only themselves, and their own actions. Even he who is the best informed, and who sees with precision, on a thousand occasions, is disabled from doing justice to the genius and opinions of others, the moment he becomes subject to these imperious masters. A
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secret jealousy hides from him every thing that is good, and solid, in his friends; and he listens to them, only to censure their opinions, and follow his own. A thousand events, capable of humiliating him, will not afford him a single precept.

The more our passions influence our judgment, the less capable are we of giving our advice. It appears to me, as the height of the art of observing mankind, when any one defines to me, the character of a great poet, or of a great philosopher, who has opened some new sources of knowledge. There are no men, who are observed, and judged, in more opposite ways, than these. Some extol them above all those who have gone before them; while others think, they are fit subjects for Bedlam. In this diversity of opinion, every one says, '*I speak impartially*'.

It must indeed, be allowed, that we never see better, or with more ease, than when a thing interests our attention. Rousseau seems to be of this opinion, when he says, that the most learned philosophers, who have passed their whole life in studying the human heart, know less of the signs of love, than the weakest female, who happens to be in love; and this is true. The philosopher, in this case, judges only from what he imagines he ought to think; and the woman judges by her feeling.

Madame Staal, who had been in the Bastille; and, of course, spoke from Experience, has observed, that persons, who are confined, are, of all others, the most attentive observers, on account of their great leisure, and their want of distraction; but, above all, from the

strong desire they have to notice every thing that is new. They attend, even to the most minute things, and seem to be all ears and eyes; and, however closely they may be confined, they contrive to notice what is going on; because, they imagine themselves to be interested in the least motion, and they, therefore, follow it to the end. The hatred one sometimes conceives for the human race, in these miserable abodes, affords to many persons an opportunity of observing man, much better than can be done in society at large. The eye is no longer open to seduction; the heart explains itself more liberally; and we see man in his true light. Tertullian reproached Herophilus, *with having hated man, that he might learn to know him*; because he had dissected living criminals. There are many circumstances, in which this assertion of Tertullian will be found to be true.

The desire of seeing a thing, sometimes occasions us to see it every where. I know several physicians, who see only certain diseases; one of these, who is a celebrated practitioner, and who has an obstructed liver, fancies he discovers a similar complaint in all his patients; and it is one particular remedy that he constantly prescribes; because he has found it useful to himself. Another is in love with Theriaca; probably, because it confines him to his bed, sometimes, for three months. Without this same Theriaca, if we are to believe him, he would, long ago, have been overcome by his complaints; *'but with this, says he, I can master them'*. I know a third, who is confined three or four months, every year, with the gout; and yet, he not only denies that he has any thing gouty about him, but contends, upon all occasions, that he
never

never had so much as the rheumatism. This physician, and all his patients after him, if we are to believe him, are subject to an affection of the nervous system; and he employs narcotics, on all occasions.

We every day see nature explained by hypotheses. There are persons, who set out with establishing arbitrary principles, and then conclude, that every thing is to be reduced to these laws or rules. These principles, however, produce the same effect in physic, as in history. They are, sometimes, ushered in, with an air of mystery, which very often passes with the multitude for depth of genius; and observations will very often be supposed to be of importance, because they cannot be understood. Nothing is so easy, as to favor every prejudice, by means of this obscurity; and it is only the penetrating eye of true genius, that can distinguish the errors, and uncertainty of these opinions, and perceive, at the same time, how all the phenomena of nature, have been modified for their support. Experience, by these means, is deprived of all her rights: her decisions are improperly interpreted; and, she is either no longer attended to, or at least, is passed by in silence; because these people, instead of speaking from facts, sacrifice nature to hypotheses. It was in this way, that Hutchinson, who was a man of great abilities in metaphysics, and divinity, undertook, without any knowledge of anatomy, to write a treatise on physiology, and to change man into a vapour machine. (p)

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(p) The work here alluded to, is entitled, '*The Oeconomy of the Human Frame, upon the Principles of the New Philosophy*'.
London,

I believe I may venture to assert, here, without being said to speak improperly, that a great number of physicians have been attacked with this epidemic. Some of them, make their observations in their studies, and give us only their dreams. This has been said of Riverius ; and yet, I know a celebrated physician, who respects his observations so much, that he would not be persuaded, one day, to alter one of his prescriptions, although it seemed to be very clear, that the fault, he suspected, was an error of the press. The same thing is said, in these days, of the celebrated Storck: is the reproach well founded?

There are others, who are so attached to the rules they have adopted for their own health, that they prescribe no others to their patients. A Stahlian, thinks only of his soul, and his hemorrhoids: like a fond lover, who sees only his mistress.

I will allow, that hypotheses in physic, when employed with genius, are sometimes useful, and even necessary. Every time that the proximate cause of a disease, is unknown to us, we are obliged to undertake the cure in hypothesis: but then, this hypothesis should be founded on the present and preceding symptoms of the disease, and other circumstances; and all these, being compared with the animal economy, the causes of the disease may be established with a certain degree of probability.

London, 1739, 8vo. The author of it, seems to have been wholly unacquainted with anatomy.

In general, we set out with explaining causes, from systems; and this is too often, the source of the impediments we meet with, in the treatment of a disease.

The chymical sect, which succeeded to that of the Arabians, served as a model to those of the moderns, who undertook to cure all acute diseases, by sweat. These people had a particular antidote for each disease; they gave cordials in all fevers, and rejected phlebotomy, cooling remedies, and clysters. This practice has been sufficiently exploded in these times, and therefore requires but little to be said against it, here. There are, still, however, too many people, who adopt this destructive method.—It would be no exaggeration, to say, that more people have perished by it, in the small-pox, only, than were destroyed, formerly, by the wars of Alexander.

Boerhaave says it is wonderful, and even shameful, to see the follies the chymists have adopted from the fables, superstition, ignorance, and falsehood, which abound in the writings of Paracelsus, and Van Helmont, and their followers. Nobody, surely, was ever less capable of observing diseases, than those dreamers; because they had only false and arbitrary ideas of the animal œconomy.

It is equally absurd, to attempt to explain every disease, by the known laws of nature, and the animal œconomy. There is often something so particular in diseases, especially in epidemics, that the most experienced physician is obliged to confess, that he sees nothing with certainty. It was from not knowing this principle,

principle, that some physicians have pretended, that the plague (*q*) could not be communicated. A populous city, became the tomb of almost all its inhabitants, before they were convinced, that the disease was contagious.

The genius for observation, suffers exceedingly, from superstition. I do not speak, here, of religious superstition, because that concerns only divines; I mean, only medical superstition; and this consists in a notion, that natural effects may be produced, by wonderful, and supernatural causes; and that effects, which are absolutely impossible, can be produced, by absurd causes. If a proposition is supported, by a testimony, worthy of faith, the opinion we form of it, is called, *belief*. If we believe any proposition, on the testimony of a visionary, it is superstition.

Under the influence of superstition, the followers, and supporters, of the most absurd doctrines, are able to raise their stupid heads, in opposition to truth. The moment we think every thing possible, that is supernatural, and wonderful, we believe in all that is repugnant to nature.

I call every thing supernatural, that cannot be proved by reason, and that neither appears to be pro-

(*q*) Dr. Z. seems to allude to the plague, at Marseilles, in 1720: The ravages it made, are well known. M. M. Chicot-neau, Verney, Soulier, and some other writers at that time, contended that it was not contagious.

bable, nor possible. I call marvellous, every thing that is destitute of proofs; and at the same time, seemingly repugnant to the laws of the physical and moral world. A very sensible divine, has illustrated this matter, by a familiar example. If any one attributes, says he, to a purgative plant, a virtue, that it does not possess, he is deceived; but this does not suppose him to be superstitious; because a purgative plant has nothing in it, either marvellous, or wonderful: but if any one should fancy, that a man, by carrying this plant about with him, would become invisible, or invulnerable, this opinion would be no longer a simple error, but a superstition. It is this superstition which has attributed to amulets many effects, which the present age know to be ridiculous; it is incredible, however, how much the human mind has given into this abuse, and how many people, even in these times, continue to have faith in them. Nothing proves, more than this, the fondness of the vulgar for the marvellous. If they, who have handed down to us, these facts, had reflected, that posterity would sit in judgment on them, they would, perhaps, have been more reserved; or would, at least, have related to us, the remedies they gave, at the same time, with the amulets. It would then have appeared, however, that the cure was, in this manner, due to these remedies, and the wonderful would have disappeared. I have read, with no little pleasure, the account Dr. De Haen gives us of the effects of Vervain; because, with his usual candour, he relates to us, at the same time, the other curative means he employed; and thus enables us to determine, from Experience, the effects, which are to be expected from this plant, when employed as an amulet: he concludes his observations, with

the following words, which I beg leave to quote :
 “ Nunquam enim in similibus tentandis, evulgan-
 “ disque, sufficienter cauti esse possumus. Coccevis
 “ scribimus & posteris. Hi, institutis iisdem experi-
 “ mentis, aut eadem, quæ nos; aut aliter quam
 “ nos; aut nihil omnino, quod nos; videbunt. Si
 “ nos rite, casteque & prudenter, nostra notaverimus,
 “ tam fausta quam adversa, quam inutilia, quam
 “ imperfecta; profecto dum Coxtanei, ferique Ne-
 “ potes, eadem prudentia experimenta nostra repeti-
 “ verint, idem, quod nos, semper adnotabunt.

“ Hoc demum modo Canones formabuntur prac-
 “ tici, qui limitent morbos, gradusque morborum, in
 “ quibus profit, non profit, noceatve, medicamentum.
 “ Sin vero aut persunctorie, aut nimis glorianter, aut
 “ immeritæ cupidine famæ, experimenta evulgaveri-
 “ mus consequetur necessario id, ut nos, & presens
 “ ætas, & posteritas, jure condemnent. Remedium sus-
 “ tulisse morbum videri protest, nec forte sustulit: ut
 “ si alia simul data fuerint, quæ emendare morbum
 “ potuerint; aut si periodici morbi sint, ut plures
 “ cardialgiæ, cephalææ, hemicranæ, arthritides,
 “ rheumatismi, &c. qui vel sponte, vel mutatis
 “ aère, vitæ genere, alimentis, vel naturæ opera,
 “ aut mitigentur, aut fileant, aut penitus sæpe su-
 “ perentur. Securos quoque nos esse oportet, quod
 “ ægri summa accuratione remedium adhibuerint;
 “ quodque non clam alia aut prætulerint, aut inter-
 “ miscuerint saltem, & tamen ne forte irascamur,
 “ neve illi careant nostra amicitia, gratia, patrocinio,
 “ tribuant nobis gloriam curæ. Hæc ut mihi con-
 “ tingere, contingunt & cæteris.” Rat. Medend.
 Tom. 2. p. 226. Edit. Lugd. Bat.

A false taste, always destroys a true one. This is the reason, why a superstitious man sees nothing in nature, because he knows nothing of her affinities : he lives, as it were, in an imaginary world. Hence it is, that superstition attaches itself wholly to what is false, and refuses to listen to common sense, because it has nothing of the marvellous : and the marvellous, alone, can interest the superstitious man ; because, to believe, requires only an inclination to see. This credulity is always more convenient, than the researches necessary in an inquiry after truth.

The less we know of the corporeal world, the more we fancy ourselves acquainted with the world of spirits. All the tales of witches, and apparitions, have originated wholly from this abuse ; and an ignorance of the animal oeconomy, and of the laws of nature, has been the source of all the superstitious remedies that are so much in vogue. It is much easier to give a barbarous name to an universal specific, than it is to apply a remedy to the nature of a disease. Boerhaave discovered, in marsh trefoil, an excellent medicine for the rheumatism. A superstitious man, hangs a dried toad to his thigh, or a twig of elder, gathered in a certain season, and keeps his disease with his specific. The influence of a particular planet, and a certain position of the heavens, &c. ought, however, to give the desired virtue to the elder-wood, or the toad. The superstitious man, acknowledges himself to be deceived ; but he refers his mistake, altogether, to the time in which he applied his remedy. His ignorance serves to confirm him in his error.

If credit could be given to persons of this stamp, they have an hundred proofs to give, of the power of their receipt. We find them incessantly quoting some learned writer, who has recommended it; or some good woman, who has been cured by it. Sometimes, they instance its good effects on themselves. It is in this way, that society, and the art of physic, are every day injured by these pretended Esculapii.

The physician, in the opinion of Hippocrates, ought to possess a certain tranquility and dignity of mind, superior to superstition of every kind; because it is impossible to be superstitious, and at the same time, to see the truth. Every thing that is repugnant to the laws of nature, is equally repugnant to reason. Nothing of this sort, therefore, ought, at any time, to influence the physician. The moment the laws of nature cease, or seem to cease, there is no longer any thing to be seen. The people, who fancy they have a right to see every thing, require something of the marvellous; but it belongs only to the empiric, to sacrifice to their weakness.

At a time, when physic itself was founded wholly on superstition, Hippocrates ventured to oppose himself, with energy, against a torrent of ignorance; and his endeavours were not without success. He teaches us, in his treatise on the Epilepsy, how to resist superstition; and points out, in a masterly manner, the tricks of impostors, who undertake to cure, by means of charms, diseases, they are unable to relieve by medicine. We find nothing in the writings of this great man, that partakes of credulity, or superstition. He listened to nature alone, and he interprets her,
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wholly from herself; because it was from her alone, he had learnt how to observe.

Happily for mankind, superstition begins to be at an end, throughout the greatest part of Europe. The dreams of divination and astrology, have no longer the influence now they had formerly. But as the love, and the obedience of the multitude, are founded almost wholly on fear; and, as this fear, has, in all ages, been the source of superstition; so, the superstition which has taken root, will never be wholly extirpated. It is not more absurd to see diseases in an urinal (*r*), than it is to predict the fate of an empire,
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(*r*) This observation, is no where more applicable, than to this country, where the people are every day, dupes to medical impostors of every kind; every body has heard of the urine doctor, Mayersbach, who lately made so much noise in London. — Impostors of this sort, however, are not confined to England. — At the village of Langnau, in Switzerland, there is a certain Michael Schuppach, whose celebrity, for many years past, has been so great, as to draw patients to him from almost every country of Europe. He confines himself wholly to the inspection of the urine. During the summer months, great numbers of people are every day going from Basil, and Bern, to Langnau, some of whom go to consult Schuppach, and others merely to see this rustic physician, who receives them in his night-cap, and waistcoat without sleeves, for he never wears a coat. He keeps an excellent Table d'Hôte, and is very moderate in his charges. Many of his patients are of the highest rank. In the autumn of 1776, there were with him, two ambassadors, and several other persons of distinction. He has erected a handsome building for their reception, near his hut; and likewise a laboratory, in which he prepares his medicines. A German physician, has lately taken some pains, to detect the artifices of Schuppach; and has published a little book on the
subject.

from a flight of birds; and yet, the first of these, is as much believed, now-a-days, as the latter was formerly: a proof, this, that the people are, in all ages, the same.

subject. The people, however, as is too commonly the case, have attributed this performance, more to jealousy, than philanthropy. There are different prints, both of Schuppach and his wife, to be met with, in all the Swiss and German print-shops.

The world has always abounded with absurdities of this kind. About the year, 1698, an illiterate peasant, named Christopher Ozanne, became so famous for his skill in physic, that coaches went regularly three times a week from the Rue Contrescarpe at Paris, filled with patients who went to consult Ozanne, at Chaudray in Normandy, distant forty leagues from Paris. The patients were all inscribed in a book as fast they arrived, and were admitted by turns to an audience, without any distinction of rank. Ozanne received them in a little smoaky hut, and his prescriptions were, usually, of some simples. He delivered his opinion in a very blunt manner, and admitted of no reply. This singularity of behaviour, was, at length, the means of his being neglected. A young lady, who had been married only three months, went to consult him, and related all her complaints. The husband, who accompanied her, added every thing that he thought would throw a light on the nature of his wife's disorder: when they had finished all they had to say; Madam, said Ozanne, your complaints are the effects of a lying-in. It was to no purpose, that the young couple remonstrated against the absurdity of such a decision.—Ozanne shewed them to the door, and called out for other patients. M. Default, who has given this story at length, in his *Dissertation sur la Goutte*, speaks of it as a fact, to which posterity, will, with difficulty, give credit. But, alas! we see similar marks of folly and superstition, every day.

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From all this it would seem, that the sciences are not yet so permanently established, but that superstition may, one day or other, resume her influence over the mind. There are too many people, who see only with an interested eye. *Quid non mortalia pectora cogis, auri sacra fames!* The genius for observation, is it not every day injured by this? Although men no longer believe in magic, or spells, or apparitions; yet, they are not wholly delivered from superstition. These are not the only errors, to which superstition has given birth. It is surely not conformable to the spirit of sound philosophy, to speak, and act, only with the vulgar, or to aim at being one of the multitude. Roger Bacon, who was almost the only wise man of his time, ventured to remove a corner of the veil, which covered, as it were, the whole earth. What would he now say, were he to see well-informed persons endeavouring still to keep down a corner of that same veil, and spreading it over themselves, and the people, whenever their interest leads them to it?

Let us suppose, that a physician is a man of genius and learning, free from prejudice and passions; still he will be exposed to endless inconvenience: He will every day, meet with persons of his own profession, whose judgment and observations will teem with contradiction and absurdity. These people, will be the creatures of the sick. In circumstances like these, a variety of remedies will be proposed, of which he can have no choice, perhaps, but from the advice of the many; his opinion, however, is required: What is he to do, on such an occasion? Is he to abandon his patient, whom he knows himself able to cure;

or

or is he to compromise his reputation, by treating him according to the advice of those with whom he is called in? must he unveil the ignorance of his medical brethren, or ought he to see as they do? In a situation like this, a man of the best capacity, when surrounded by so many impediments, loses that tranquillity of mind, which is so essential to just observation; and the sufficiency and folly of the crowd about him, embarrasses him the more, as truth is known to have no enemy more formidable than ignorance.

On the other hand, the prejudices and passions of the patients, themselves, are to be opposed and silenced. If a physician is deprived of this advantage, and happens to fail, even when the wisest measures have been adopted, he is persecuted by a merciless slander. His brethren, jealous of his rising reputation, take occasion to blacken his fame; and thus the man of true genius, becomes a monster in society. I have seen too many proofs of this conduct, and of its unhappy effects, in retarding the progress of medical knowledge.

It is evident, then, that the favourable or unfavourable termination of a disease, often depends more on the behaviour of the patient, and those about him, than on the observing genius of the physician. The equity of a patient, raises the hopes of a physician; stimulates his attention, and enables him to see well; because he views things with tranquillity: whereas, injustice, is a considerable impediment to exact observation. A prudent physician, will, therefore, endeavour to gain the confidence and affection of his
 patient,

patient, by all the means that honour and probity will allow: he will do this, by a noble and disinterested conduct; and, above all, by appearing to be well instructed in his art, and with a proper sense of his own abilities. A physician, will, sometimes, by these means, lead a patient to follow him in every thing; and thus he will be enabled to observe the nature of the disease, properly.

Of all the impediments that the genius for observation will be liable to meet with, a company of ignorant people, is indisputably the greatest.



C H A P. III.

Of the Utility of good Observations.

IT was observation that first gave rise to the art of healing, and has since led it on towards perfection. Physic, without observation, is only an empty sound.

The first care of physicians, was to form ideas of individual things ; after which, they began to reason on these, and then deducing the consequences of each, they gradually went from particular to general ideas ; and, from that which comes under the cognizance of the senses, to that which did not, and which was, of course, unknown.

Good observations, are, therefore, the basis of all our reasoning. If they are good, they are acknowledged as *Data*.

In the infancy of physic, men were led by chance, to the knowledge of diseases, and the methods of curing them. The ways of nature, thus opened by chance, led on, insensibly, to a true knowledge of them. It was soon discovered, that the art of healing,

ing, could be learnt only by observing nature. The best practitioners, therefore, followed her; and the art declined, every time physicians deviated from her steps. Men of true knowledge, will allow, that more light is to be acquired, from the essence of things themselves, than from their history; and that nature is an inexhaustible source of knowledge, in which the first ages sought for truth, and in which alone, even now, we can think of finding it.

From the days of Hippocrates, to Van Swieten, the fathers of true physic, have followed nature, by a diligent observation: they have all of them given the same precepts. The true disciples of Hippocrates, light up the flambeau of nature; his enemies extinguish it.

Diseases are so various, and the things to be observed in them, multiply themselves so much, that our attention to them, never remains unrewarded. The more minutely we notice all the circumstances of a disease, the better we are enabled to distinguish each of them properly; and the facility of the art of curing, is proportioned to this faculty. The more we have examined the nature and effects of remedies, the more we shall have reason to hope from them, when we have occasion to apply them. We shall be able to form just ideas of the art of observing, when we shall have seen what is the characteristic of good observations.

A physician's observations extend to every thing that concerns the art of preserving men from diseases, and of distinguishing, and mitigating, and curing those with which he is attacked. I shall con-

fine myself, in this book, to *the art of observing diseases*. In the following books, I shall speak of *the art of curing them*; because it is necessary to observe before we begin to reason. I shall speak of medicines, in another part of this work; because a physician of genius, will know what remedies are indicated, before there is any question of observing their effects; and because to apply them, recourse must be had to cause.

Observations should be made with the greatest accuracy: this accuracy will chiefly consist in carefully noticing a number of little circumstances, which easily escape the eye of the observer, but which have a considerable influence over the whole; for, they sometimes point out some new ways, wholly different from former ones. The most minute circumstances become interesting, when one sees, without guessing; and when we are thoroughly persuaded of the reality of a thing, before we attempt to investigate its cause.

Hippocrates is the true model of accuracy, in point of observation: he saw things which escaped the attention of others; and what he saw, was of importance. The Greeks read in the great book of nature with so much attention and exactness, that it is in their writings, we must, even now, in preference to all others, go to seek for the distinguishing and invariable signs of diseases. I cannot wish for the reputation of a good writer, says Boerhaave, when I compare my aphorisms with those of the ancients, and judge myself by them.

Both

Both patience and prudence are required for the making of good observations. Impatience deprives us of the confidence, we might, very properly, entertain of our own powers, and opposes itself, as it were, to the efforts we might make, to surpass even ourselves. Prudence keeps every deception at a distance, and prevents every allusion of the senses, of the imagination, or of system. Nature, slowly studied in herself, is much more easily attained, than in systems: these only suppose her; whereas, she, herself, appears to us in her true light.

Good observations ought to be sufficiently repeated. It is the best way of distinguishing the false from the true; the doubtful from the probable; and the probable, from what is certain. An observation, well confirmed, is often as valuable as a new one: at least, it brings us much nearer to truth. Both philosophy and physic, have gained as much by the repetition of observations already made, as by the discoveries themselves. If Hippocrates is not equally certain in all diseases, it is because he had not an opportunity of repeating his observations, in some of them, often enough. The ancients, however, were superior to us, in this respect. Our application, though we vaunt it so much, is, in general, a very irregular one. They went from the closet, to the bed-side; and from the bed-side, to the closet.

Our observations are not made with sufficient care; because we do not repeat them with sufficient accuracy. We are more inattentive than the ancients were. Hahn was in the right to wish that an Academy might be established, which should be employed wholly,

wholly, in repeating observations made in other places; in completing those that are imperfect; correcting erroneous ones; and collecting together all the useful ones, to which the students of nature might have recourse with confidence.

Observations ought to be made with sincerity, even although this sincerity should lead to a thousand doubts. They ought to contain all that the physician has seen, and the manner in which he saw; in order that those who come after him, may penetrate farther into the subject, or correct his errors. The generality of observers, are accustomed to discover the affirmative side of things, and to throw a veil over the negative. It is to give up our name, and our art, to disgrace, to do this. Time will penetrate into the darkest obscurity, and the imposture, will, certainly, one day, or other, be brought to light.

There are others, who relate the truth, only when it promises to add to their reputation. They do not seem to know, that it is truly reputable, to relate even our errors, when they are likely to be useful. We ought not only to aim at success, but to avoid error. He, who confesses his error, thereby acknowledges to us, that he is better informed, than he was before he committed it.

It is not the rarity of an observation, that renders it useful: philosophical and medical truths are not valuable, merely because they are uncommon. The price of an old medal is increased by its rarity; but this is matter of opinion only; whereas, a truth, whether it be in philosophy or physic, becomes interesting of itself.

itself. An old and rare manuscript, is often purchased at a great rate. It is the truths only, which it may contain, that can interest us. Lord Bacon allowed a place in Natural History, for the most trivial observations; because we are the most apt to neglect what we see every day. Every observation is important, when it forms a link of the great chain, which leads to incontestable truths.

A physician, who establishes a good method of treating the most common diseases, by judicious and certain observations, contributes more to the good of society, than another, who attaches himself wholly to uncommon ones; because these, though very valuable in an academical collection, will avail but little in ordinary practice. Let any one read what Tissot has written on the abuses of opium in the small-pox; and likewise what he says on the dropsy and apoplexy; let any one consult, at the same time, what Morgagni has said on this interesting subject, in the dedication of his fourth book on the seat and causes of diseases.

Good observations, ought not to be mixed with reasonings. We should write down the phenomena which nature presents to us; and as we see them; not as we would wish them to be. To effect this, nature must be attentively listened to; and we should carefully avoid forming any decision, till she has spoken clearly. Instead of submitting nature to our understanding, we should do the contrary. We should candidly relate what we have seen, and leave it to others to derive what they can from our observations.

The

The reader may be able to see with our eyes, when we plainly and simply tell him what we have seen: whereas, he may view things in a false light, if he has our judgment to encounter with, at the same time. This was the reason, why Boerhaave advised an observer, scrupulously to avoid every thing that might partake of the spirit of system or opinion.

During the increase of a violent fever, there will be considerable heat. This is very clearly and distinctly to be perceived. A Galenist would ascribe this heat to the bile; the chymists, to an abundance of sulphur; Van Helmont, to the fury of his archæus: all this is uncertain, and partakes of party. The judicious observer, will, therefore, avoid these reasonings, and confine himself to truth alone.

We ought to retain only what we have observed; or, at the most, what is so clear a consequence of our observations, that the most equitable, and best informed judge, shall be unable to deny its reality. This reflection proves, that Rousseau was in the right, to stile Thucydides the model for historians. He perceived, that Thucydides relates every event, without judging any; and, at the same time, that he omits no circumstances, which can enable us to judge them, ourselves. It is indeed true, that Thucydides exposes clearly, to our view, every thing that he relates; and at the same time, conceals himself so artfully, that we fancy we are actually seeing, and not reading.

The great itch for mixing our opinions with our observations, is the reason, why the truths we derive from men of genius are so often interspersed with false notions. This, too, is the reason, why almost all the learned societies of Europe, are every day publishing things contradictory to Experience. It has even been said of a certain Academy, that it affords more idle tales, than a nation of Hottentots would do.

A writer of observations, should express himself with great accuracy. There should be nothing obscure, either in his style, or the terms he employs. A good description of a disease, is as instructive as the disease itself. This description is to the disease, what a copy is to an original picture. The painter should add nothing of his own. The resemblance may be rendered with features more or less striking, but the same features are to be rendered, and, if possible, with the same degree of expression. We must describe the infirmities of the patient, his sufferings, his very gestures and attitudes, and even his expressions and complaints. If there is either ornament or disguise in all this, we at once forsake nature.

I have often been consulted by men of fine genius: all that I required of them, when they wrote to me, was, to give me pure and simple nature in their letters. I was sure it would be impossible to understand them, if they mixed any of their genius with their complaints. Perhaps, to the generality of copyists we might make the same reproach, that a celebrated academician once did, to the translator of Demosthenes: *Alas! did I not say, that this fellow was going to*

give genius to Demosthenes? It was always nature, who spoke from the mouth of that celebrated orator; and the translator had dressed him out in buckram.

What is commonly, though improperly, called Eloquence, does much harm, very often, in the history of a disease; because, a diffuse description usually becomes unintelligible, in proportion, as we endeavour to heighten it.

Every thing that nature presents to us, is not of equal importance. Precision, or the art of saying of a thing, only what belongs to it, is, on every occasion, one of the leading marks of genius. *When you say any thing, says Horace, let it be short.* Every thing should be removed from a description, the absence of which, will not diminish its utility or energy. The most trifling circumstances, however, are not to be neglected, when they tend to multiply the points of view of any object. The remarks of a good observer, will, therefore, be concise, modest, and will seem to flow from the very essence of things. So, that without clearness of ideas, propriety of terms, and precision, and perspicuity of expression, never will a description be adapted to things, or things to a description. The reader will see only the *pristis* of Horace; and who will not smile at such an observer? *Risum teneatis, amici?*

Observations, for which I have hitherto given only general rules, are either particular or general ones. Particular observations, contain only what has been seen in individual cases. General observations, describe what has occurred in many persons.

Sydenham

Sydenham was of opinion, that but little utility could result from particular observations, if the observer confined himself to the making it appear, that such a disease was cured once, or oftener, by such a remedy. "Of what advantage," says he, "is it to me, that a single medicine, which I knew not before, is added to the immense flock of eminent medicines, that we have long been pestered with? But if, laying aside all others, I should use only this, ought not its virtues to be approved by numerous experiments? And are there not, also, numberless other circumstances, relating both to the patient, and the method of cure, to be considered, before any advantage can be reaped from a single observation?" (s)

Friend, however, has objected, in opposition to this opinion, that the compleat and rational method of cure, on which Sydenham insisted so much, was due to the exact observation of particular cases; because, when these histories are written with discernment and candour, they have this advantage, that by shewing us the minute circumstances, and most imperceptible shades of diseases, they tend to point out a sure and certain method of cure.

In the opinion of Friend, Hippocrates has written his particular observations with infinite judgment,

(s) See the preface to his works.

having dwelt in them on every thing that is essential in physic. He has expressed to us the form, and, as it were, the features, of each patient's disease: the colouring of each of these pictures forms a direct indication of the methods of cure, although he passes them over in silence (*t*). Friend goes farther, and says, that general histories, however extended and exact they may be, tend the less to perfect the art, as all the signs are neither to be met with in the same patient, nor are re-united in different diseases. To this may be added, that the difficulty of forming a sound judgment, is increased by this, that the signs, which are not mortal in one patient, are sometimes fatal in another; whence it happens, that the precepts, which are, in general, written on the art of curing diseases, are either useless to the physician, or deceive him: whereas, particular histories teach to distinguish, not only the different characters of the same disease, but likewise the time, and the power of each symptom, and the medicines that will be required at different periods of the disease.

It is right to compare these two physicians. Sydenham was inclined to general histories, and rejected particular ones. Friend, was of a contrary opinion.

(*t*) The great Sydenham says, " I have done my part, by mentioning the indications to be answered, and pointing out the time, and manner of doing it: for the practice of physic, chiefly consists in being able to discover the true curative indications, and not medicines to answer them; and they who have overlooked this point, have taught empirics to imitate physicians." See the preface to his works.

Both

Both seem to be necessary. In general histories of diseases, we see every thing arranged, and of its own accord, as it were, that is common to many patients; or we see a disease, according to its more general phenomena, and the curative means, which are the best adapted to it. In particular histories, we describe every thing that deviates from this general rule; or we discover by it, that one disease is more complicated than another, or attended with unusual symptoms; or, that it terminated in an extraordinary manner. If all diseases, without exception, were uniform in their appearance and progress, I should wish only to have general histories: but, as the particular circumstances of a patient, will occasion frequent exceptions to the general rule, particular histories will often be found to be the only ones that will be useful. Although nature is simple in her appearance, when viewed in the whole, yet she varies in her parts; and it is, therefore, necessary to be acquainted with her in both.

Of all, that good observers are able to teach us, the natural history of diseases, is, in general, that which is of the most importance: it is this alone, which enables us to judge properly of all the circumstances of a disease. By carefully attending to effects, we arrive, gradually, at the knowledge of their causes, and these lead us to the indications and means of cure. It is this study only, that can inform us, what is peculiar to the disease, and what is merely an effect of the remedies; and whether the cure is the work of nature, or of the physician. It is therefore, by this history, that we are able to interpret the language of nature, and to find out when the physician

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is required, to act, or to leave her to herself. It was to this useful purpose, that Sydenham employed all the powers of his genius, by studying the natural history of diseases. He was convinced, that the only way to avoid error, and to acquire the knowledge of diseases, was to study nature.

Hoffmann thought one good history of a disease, of more value than a thousand pretended secrets, or pompous compositions, which promise every thing.

Having thus considered, in a general way, the characteristics and utility of good observations, there now remains, for me, to point out some particular connexions they may have with our Experience.

It is a common supposition, that the most experienced physician, is he, who has seen the greatest number of patients. This notion is erroneous. The physician who visits the most patients, and he, who in the same town visits the fewest, may very often be said to *see* the same number. Each country, and even each town, is subject to certain diseases, which prevail more in some seasons, than in others. The physician, who is much employed, sees these patients in a superficial manner, for want of time. He who has less to do, considers each case at his leisure, and with more attention.

Continual fatigue, and a great number of patients, and, above all, the embarrassment of the assistants,
or

or friends of the sick, prevent the physician, who is in great vogue, from making observations as he ought to do, by reflecting on each ; comparing them properly with each other, and with those of former ages ; and then endeavouring to ascertain their causes. It has been said, that the physician, who is employed night and day amongst the sick, is like the priest, who is incessantly running about with the sacrament, and who sees a great many patients, but not a single disease.

So, that of many physicians equally instructed, or equally circumscribed, in their knowledge ; they who see the greatest number of patients at a time, will be the least certain in what they do. The understanding does not gallop so fast as physicians do.

A physician, who is constantly employed, sees too much, and does not think enough. The rapidity, with which objects strike him, does not permit him to fix on any of them, sufficiently ; and therefore, they leave in his mind only a confused impression, or an obscure remembrance of them. Such a practitioner cannot enter into any of the minute circumstances of a patient's case, and therefore cannot adopt his remedies to the variety of these circumstances. He takes them all by the great.

I know a certain Esculapius who has 50 or 60 patients every morning in his anti-chamber. He just listens a moment to the complaints of each, and then arranges them in four divisions. To the first, he prescribes blood-letting ; to the second, a purge ; to the third, á clyster ; and to the fourth, change of air.

1 once

I once heard a physician of this stamp say, "*I purge all my patients to day, because I am going into the country*". (u)

This same vulgar prejudice, leads people to have a great idea of the practice of large hospitals. I have seen in my travels, some of the largest hospitals in Europe; and I have often said to myself, Heaven surely will have pity on these miserable victims! Many that I saw, are very good, and very advantageous; not from the number of the sick, but from the careful attention of the physicians to particular cases. (w)

Hippocrates himself, practiced only in little towns, not one of which was, of itself, sufficient to support

(u) I believe it is our English Aristophanes, who has very well ridiculed this matter in his *Devil upon two Sticks*, in which he makes one of his doctors say, '*What did you do yesterday?*'— '*Why, Sir, we bled the North Ward, and purged the South*': '*Well, then, to-day, you may bleed the South Ward, and purge the North*'. I once attended the physician of a large hospital, on the continent, who visited and prescribed for 169 patients, in 25 minutes: he might literally be said to run through the ward.

(w) There are commonly from 150 to 180 patients, in the infirmary at Edinburgh; but the attention of the students is directed chiefly to a much smaller number: seldom more than 15 or 20, who are disposed in two wards. These are the subjects for the clinical lectures: and a young physician will learn much more by carefully attending to this small number, than by going, every day, through the Hotel Dieu at Paris, where there are sometimes more than three thousand patients.

a single physician. Most of his observations were made in Thessaly and Thrace; and he names only small cities. Galen somewhere says, that the smallest quarter in Rome, contained more inhabitants, than the largest town in which Hippocrates practised. It is, therefore, not the great number of patients, but the capacity for deriving all the possible information, from each particular case, which tends to form the experienced physician.

Each disease has something that is peculiar to it. The eye of the empiric passes over these particularities, with as much inattention as the most ignorant spectator. A simple physician sees no more than any other simpleton would do. In the eye of a man of genius, the most common phenomena becomes worthy of the most serious attention; because, it is from these, that he learns to generalize and establish his principles. I may add too, that the most common phenomena, are the least known by the generality; and this, merely, because they are common: whereas, the man of genius, discovers in every circumstance, some shade, or striking singularity; because one body differs from another, says Hippocrates, even when it is of the same temperament, and seemingly in similar circumstances. It is, therefore, the genius for observation, alone, that can, in these cases, distinguish the various complications of diseases, and deduce from them the true principles.

As it is impossible to arrive at the knowledge of a whole, before we are acquainted with its parts; it will easily be conceived, of how much consequence it will be, not to neglect the least circumstance,

even that which seems the most known. This known circumstance is, as it were, the chain, that unites together the truths we are in search of. It draws us nearer to the unknown, and enables us to see nature more nearly. It is by means of these little circumstances, likewise, that we are enabled to follow her through the mazes she so often pursues. and that we estimate the degrees of probability of the phenomena she presents to us.

A physician will, therefore, never have clear ideas of a disease, unless he brings with him that scrupulous attention, which, so far from neglecting any thing, aims at profiting from all. It is by this attention, that the observer will be enabled to distinguish what is essential to a disease, from what is purely accidental; and likewise, what is constant and invariable, from that which is only temporary. The true indications can never be known, till we have learned how to distinguish effects from causes, and *vice versa*. Hippocrates carried this attention so far in his observations, that the most experienced physicians, since him, have constantly flattered themselves with having seen nature properly, when they have seen it as he did.

A disease, once observed and determined as it ought to be, is so for the whole life of a physician. This truth, is founded on a rule, followed by the Greek physicians, at the beginning of their practice, and which I have pursued in the following manner: When I visited a patient, I wrote in my journal, all that I could observe in this first visit; together, with all that the patient related of his preceding complaints,
and

and all their various circumstances; and likewise, all that I could distinguish concerning them, myself. I then marked down the best opinion I could form of them, together with the indications I could perceive, and the remedies I prescribed. At the second visit, I noted, very attentively, all that had happened since my last visit, and thus gradually added to the history of the disease, by writing down all its particulars, with great exactness. I noted the changes that the remedies produced, and I concluded with marking, whether I had properly or improperly acted, according to the event, and what opinion the patient and his friends had of my conduct. In this manner I employed myself at every visit; and whether the patient died or recovered. I constantly examined, with the most scrupulous attention, all the circumstances of the disease; the nature of the remedies employed, and their application; together, with the causes of my good or bad fortune. It was from these inquiries, that I deduced rules for my future conduct in practice.

These observations, when collected together, have convinced me, that a physician avoids many difficulties, who sees a disease a second time, after having thus minutely attended to it the first. Circumstances may vary; but the whole does not change. Boerhaave (x) attests, that he never saw a patient, at the

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beginning

(x) This is the way in which Boerhaave expresses himself, in his *Prælect. Academic.* Tom. VI, p. 281. Edit. Haller. "In prima

beginning of his practice, without writing down all the circumstances and symptoms of the disease, in the order in which they presented themselves; and, that it is incredible, how much he had profited by this mode of proceeding. If you do the same, said he, to his scholars, you will have no sooner known four or five diseases of the same class, than you will be able to distinguish them, during the rest of your lives.

It is impossible for nature to contradict herself. Good observations in all ages, have proved this truth. Hatred, envy and ambition, are with us, such as they were amongst the Greeks. Our passions and foibles are painted by their moralists, as our pleurisy, and tertian fever, are by Hippocrates: and yet, men are not exactly alike in every place.

An excellent philosopher of our own times, has said, that the writers of modern travels, inform us of no-

“ prima visitatione ægri, non quidem aliam sententiam proferes,
 “ quam versatilem aliquam & medicamenta innocua: scribe
 “ vero in chartam symptomata, eam domi Tecum animo per-
 “ volve, quære ex te ipso, quis morbus est? quænam pars
 “ adfecta? In quonam statu morbus est? Quid inde potest
 “ timeri? In quamnam partem potest morbus decumbere?
 “ & vix unquam morbum non intelliget, qui prius recte per-
 “ spexerit omnia: neque intelliget morbi naturam, si neglexerit.
 “ Coram ægro vero nullam trepidationem oportet apparere;
 “ & ibi aliquid firmiter, quasi ex mathematica demonstratione
 “ affirmari debet; quod altera die fieri poterit, morbo jam
 “ cognito. Fiducia enim ægri confidentiam medici sequitur,
 “ neque obsequetur facile medico, quem incertum esse videt.”

thing

thing that we did not know before. These authors, says he, have remarked, on the other side of the globe, only what they might have seen in their own street, without going from home: and that this is the reason, why the true features, which characterize each nation, and which strike the eye of the connoisseur, have escaped them. Hence, that stale maxim, which is so often repeated, that men are every where the same; and, that it is, therefore, of no use to characterize each nation in particular; because the same passions, and the same vices, are every where equally prevalent. It is the same, as if any one should take upon him to say, that Peter cannot be distinguished from James, because they have each of them a mouth and eyes.

But man is generally every where the same, when in the same circumstances. His diseases, like the plants of different countries, follow the same order and progression in their beginning, their increase, and event. In all ages, the same physical and moral causes have had similar determinate effects, in similar circumstances; and the same changes in the body, have constantly produced the same diseases. Even in climates, that are the most distant from each other, similar causes draw together, as it were, the most opposite parts of the globe, by the identity of their effects.

From the diversity of causes, there will certainly result a diversity of effects, even in the same city, or the same house; and it is of the greatest importance, to notice this difference. Nothing, however, is so uncommon, as to see nature totally forsaking her ordinary routes. A pleurisy, which should require wine
and

and theriaca, would be a greater rarity, than a child with two heads. An observation once made, is applicable to every time and country, when the causes of the phenomena are once known.

I sometimes hear pretended wits affecting, with a tone of raillery, that physic is still such as it was in the days of Hippocrates; and that the best informed physicians of these times, know only that which he knew. Hippocrates, was, indisputably, the first good observer of nature, of whom we have any knowledge, and his works are considered even by M. D'Alembert, as the most beautiful and comprehensive monument of the knowledge the ancients had of nature. If, therefore, Hippocrates saw nature, as it ought to be seen, we can only see it as he did. If we supposed otherwise than this, it would be to imagine, that nature is no longer the same. There are, therefore, many circumstances, in which we are not more informed than he was; because that is not possible. It were to be wished, that these gentlemen could, with justice, reproach all our modern physicians with knowing only as much as Hippocrates did.

Pope somewhere says, that what is *reasonable*, must necessarily have been so in all ages; and, that what we call *learning*, is nothing more than a knowledge of what the ancients considered as reasonable; that they who pretend that our ideas are not our own, because they resemble those of the ancients, may, on the same grounds assert, that our faces do not belong to us, because they are like those of our fathers; and that it is, therefore, a manifest absurdity, to require us

to

to be learned ; and, at the same time, to be offended, because we are so.

It is in this way, that man, always ready to humiliate himself, seeks in his own reasonings, the means of confounding his insufficiency and his pride. There are some men of so fantastical a turn of mind, that they had much rather deny their existence, than seem, in any thing, to resemble their fellow creatures. I once knew a man of very extensive learning, who considered all the moderns as plagiarists; quoted only the ancients; and yet said, at the same time, that he should be very sorry to be indebted to them for a single idea. That the ancients saw many things better than we do, is very possible; circumstances were, perhaps, more favourable to them. But, that we have not the same advantages, in many cases similar to those which they saw, is what I deny. Hippocrates, may, therefore, in many things, have seen less than Sydenham, Van Swieten, Hoffmann, &c. and yet it is not the less true, on this account, that a disease well seen and described by Hippocrates, is so for all succeeding times, and for every place, allowing for the difference of circumstances. The same thing may be said of what the moderns have observed. And why should not all this knowledge be our own, from whatever hands we may derive it? Are we not more instructed than the ancients, when we unite to their observations, the discoveries of the moderns? (y)

The

(y) The celebrated Dr. Cadogan, will at once reply to this query of the learned author. "Some industrious men", say he,

The observations of true physicians, of every age and country, will be always true; and, of course,

he, in his Dissertation on the Gout, “ fancying, that whatever
 “ is valuable, must lie deep, have, with the greatest alacrity in
 “ sinking, plunged into the immense abyss of ancient Greek,
 “ Roman and Arabic learning, in hopes of finding good precepts
 “ of health, and sure remedies for disease: but after all their
 “ pioneering into endless heaps of rubbish, what have they found
 “ at last, but this? That in natural philosophy, some of the an-
 “ cients were very ingenious in guessing wrong; for guess was all
 “ they did; they never studied nature at all; they made no ex-
 “ periments, and therefore knew nothing of her; but either
 “ blindly followed or combated each other’s opinions; school
 “ against school, and sect against sect, waged equal and endless war.
 “ In the art of physic, it was impossible for them to know much;
 “ for before our immortal HARVEY’S discovery of the circula-
 “ tion, there could be no physiology at all; nor any knowledge
 “ either of the internal structure or action of any one part of the
 “ body. Before the justly celebrated ASELLIUS and PEQUET,
 “ there could be no idea of nourishment; nor was it known how
 “ our food passed into the blood, whether it went there or not,
 “ or what became of it. But now, since these lights have shone
 “ in upon us, all the ancient conjectures, reasonings and sys-
 “ tems, must vanish like morning clouds before the Sun. Besides
 “ all this, there are some of our diseases, which the ancients had
 “ not; nor have we all theirs: some few, and very few useful
 “ discoveries, they made in medicine, which have descended to
 “ us; and, with some late tricks in chymistry, are the chief foun-
 “ dation of modern quackery. Thus have men of deep learn-
 “ ing, if the knowledge of ancient errors can be called so, sunk
 “ far out of sight of truth, which, in things of general use and
 “ necessity, particularly the health of mankind, lies most com-
 “ monly upon the surface”.—The learned professor Van Doeve-
 “ ren delivered in the year 1771, an academical oration ‘ *De Recen-
 “ tiorum Inventis, Medicinam hodiernam Veteri Præstantiorem reddenti-
 “ bus*’, &c. This discourse is but little known in this county, and the
 reader.

point will be to know how to appropriate this treasure

“ Tales ut hodie vivi & salvi dias luminis auras saluent, facili-
 “ plerumque ope efficit verſis in pedes, quæ pauciſſimis veterum
 “ adhibita. Vix a lachrymis abſtineo quoties in mentem revoco,
 “ neque veteres, neque fere ad noſtrum uſque ævum ullos medi-
 “ cos, aut chirurgos, artem calluiſſe, tenellos capite prævio ad
 “ exitum paratos, ſed naturæ defectu vel inertia retentos, vivos
 “ in lucem producendi, ſed certæ morti illos reliquiſſe, aut
 “ crudelibus injectis uncis protraxiſſe quos hodierni labores
 “ facile veſtis ope, aut multo tutius & facilius apta & innocua
 “ forcipe, vivos, ſalvis quoque & illæſis matribus educere poſ-
 “ ſunt.” Our Materia Medica is enriched with rhubarb, jalap,
 ipecacoanha, ſarſaparilla, camphor, columbo, nitre, &c. and
 above all, by the peruvian bark: others are more explored, and
 their effects better explained; as mercury, opium, and antimony.
 Then we have the belladonna, cicuta, colchicum, ſtrammonium,
 polygala, quaſſia, uva urſi, mezereon, radix lopez, &c. all which
 were unknown, or unattended to, by the ancients; as were the
 preparations from iron, mercury, &c. and the various tinctures,
 and extracts, which have been acquired by modern pharmacy:
 and yet, with all this, adds the celebrated writer, it is ſtill agi-
 tated amongſt philoſophers, whether there are more people in
 the world; or, whether men live longer now, than they did for-
 merly; or ſo long as this perfection of the art might ſeem to
 entitle them to do. The answer to all theſe inquiries, is to be
 fought for in our luxuries, commerce, &c.—New diſeaſes have
 been introduced, which were unknown to the ancients; ſuch as,
 the lues; ſmall-pox; meaſles; petechiæ, which have been ſo
 fatal in Europe, as to be called *peſtis ſeptentrionalis*: nervous diſ-
 eaſes, which were, perhaps, not known to Hippocrates, though
 this is diſputed: ſcurvy, which, though not quite unknown to
 the ancients, has more heavily afflicted later ages. To theſe
 cauſes of depopulation, may be added, wars: becauſe, though
 mor: ſoldiers fell in actual battle formerly, than now; yet, how
 many in our times, fall victims to ſpirituous liquors, lues,
 ſmall-pox, diſentery, &c. In this century, an army of 30,000
 French, periſhed in one year, in Bohemia; and a French writer,

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treafure to ourfelves; and this can only be done
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(*Interets de la France mal entendus*) asserts, that 300,000 French, died in battle, or by diseases, in the last war: if we add to this, the number of Germans, English, and others, who perished in the same space of time, we may form some idea of the loss the human species suffered. We may add to this, that more soldiers are now entertained in peace, than formerly. Navigation, is another great source of depopulation. It has been calculated, that, of the many, who go to, and return from the Indies, one fifth part die in the voyage; and how many more fall victims to intemperance, change of climate, &c. Other causes of depopulation, will be found in the present rage for quackery, and in the unskillfulness of many of the modern pretenders to physic; good women, &c.—There are others, however, who will be found to have very different sentiments from Cadogan, and Van Doeveren; and; who will fancy that they see, in the writings of the ancients, every thing that the moderns have invented. When Harvey discovered the circulation, many of his jealous cotemporaries, when they found themselves unable to dispute the truth of his observations, aimed at diminishing his merit, by endeavouring to prove, that the circulation was known to Hippocrates. A certain professor, on the continent, one day shewed me, the *Membrana Caduca* of Dr. Hunter, in the writings of Aretæus; though, I confess, I could not perceive the resemblance. The learned M. Dutens, who has published two volumes, entitled, '*Recherches sur l'origine des decouvertes attribuées aux modernes*,' has taken up the cudgels for the ancients, with so much zeal, and so much success, as to have proved very clearly, to more than half his readers, that almost all our late inventions are recorded in the writings of the ancients. How, then, can we form any decisive opinion on this subject; and, when men of so great and extensive erudition, are at such wide variance, how are little readers to be guided. It seems to me, that men, who are too apt to run into extremes, either lavishly idolize the ancients, and allow no merit to the moderns; or, giving all to the latter, consider the great lights of the earlier ages, as so many idle dreamers. This last opinion, too often proceeds from a deficiency either of taste, or abilities, to relish
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by attending to nature, as they did; and thus learning how to profit by her indications.

the Grecian literature. The ancients, cannot be said to have interrogated nature, because they made no experiments; but they certainly listened to her with unremitting attention. Boerhaave has said, ‘*optimum quod in medicina, a veteribus descriptum est, id certe esse Σημειωτικόν quæ minus hodiè elucescat*’. It is indeed, indisputable, that the books of the divine Hippocrates, de Prognosticis, de Prædictionibus, de Coacis Prænotionibus, de Judicationibus, de Morbis Popularibus, and his Aphorisms; together with much of the writings of Galen, contain most valuable histories of diseases, and such accuracy, with respect to their signs, as no modern physicians have been able to excel. The latter of these, however, divided his signs, with too much subtilty, and mixed them with peripatetic principles, the doctrine of the four humours, &c. There are, likewise, many excellent precepts, in semeiology, to be derived from the writings of Celsus, Aretæus, Cælius Aurelianus, Paulus Ægineta, Tral-lian, and others. But, when a physician unites to a knowledge of these ancient writers, the works of Sydenham, Boerhaave, Prosper Alpini, Baglivi, Morgagni, Hoffmann, Van Swieten, Haller, Huxham, Pringle, Baker, Cullen, De Haen, and others, of the moderns; he may, then, surely, without any disparagement to ancient medical literature, give the preference to that of the moderns.



C H A P. IV.

*Of the Observation of the Phenomena in Diseases,
and of their Signs.*

THE observation of phenomena, ought to be the first employment of the mind, in the vast study of nature. The signs, are, to the attentive physician, the lights which are to lead him on, in the uncertain way, in which he will often be surrounded by obscurity; and, where his senses will suffer a thousand objects to escape them, from the illusion which abuses them.

To form distinct ideas of the diseases of individuals, we must know what has taken place in the body, so as to disturb and injure its functions. It is only by the mind's eye, that this can be discovered, because, it is our reason alone, that can lead us on in the investigation of things, which are not submitted to the senses. Hence it was, that Hippocrates was willing to reason only from the phenomena.

The symptoms, are these phenomena:—it is on these, that the attention fixes itself; and it is always of importance, to consider them carefully, before

fore we proceed to any conclusions, concerning the nature of the disease. A physician, therefore, attaches himself to the changes, which have happened to the body, and estimates them, according as they occur to the senses, without attending to their causes.

To understand, by the word symptom, every effect of a disease, would be, at once, to discover the source of the complaint. Every symptom, is not an effect of the disease; but, in general, every particular change, different from health, which happens to the body, and falls under the senses, may be called symptom. (z)

Symptoms, are generally distinguished into essential and non-essential. The *essential* symptoms, are those, which proceed immediately from the disease itself, and are inseparable from it. Thus, fever, cough, pain in the side, and difficulty of breathing, are the essential symptoms of pleurisy. The *non-essential* symptoms, are those, which occasionally appear in a disease; as vomiting, sweating and diarrhoea, in pleurisy.

(z) Dr. Gaubius sets this matter in a much clearer light, in his *Instit. Patholog.* “Tria nimirum in se æger habet, quæ præter naturam sunt: morbum, hujus causam & symptoma. Mutuus inter hæc nexus datur. Uti morbus non sine causa, ita nec sine symptomate esse potest: nec hoc vicissim sine illis Utrumque porro symptoma si sua vi aliam rursus produxerit affectionem sensibilem, hæc symptoma “symptomatis vocatur”.

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The essential symptoms, are divided into symptoms of the disease, symptoms of the cause, and symptoms of the symptoms. The symptoms of the disease, are those which result from its actual presence; and these, are, of all others, the most important, because they tend to denote its nature: they differ, however, from the disease itself, and from its proximate cause. The fever, the pain, and the difficulty of breathing for instance, which are the symptoms of the disease, in pleurisy, differ from the inflammation, or proximate cause of the disease.

I pass over, in silence, the too subtle divisions of symptoms of the cause, and symptoms of the symptoms, &c. because, all this is foreign to my plan, and even useless. Simplicity, is always to be preferred both in speaking and teaching.

Sometimes, we remark other sensible effects in diseases, which considered in their origin, are, indeed, of the number of essential symptoms; but which are, however, so permanent, that they last longer than the disease itself. They are, therefore, regarded, rather as secondary diseases, than symptoms: such are the palsy, after the colic of Poitou; palsy, after the gout; asthma, after an inflammation of the breast, &c.

We likewise distinguish other symptoms in diseases, which the ancients stiled *Epigenomena* (ἐπιγενόμενα) and which are, by no means, to be confounded with those of which we have spoken, because they totally differ from them. By these symptoms, we understand those movements of the system, which oppose themselves to the disease, until the natural powers of the
body,

body, are overcome by the violence of the disease: to this head of *epigenomena*, may be referred extraordinary nausea, spasmodic affections, convulsions, fevers, cutaneous eruptions, abscesses, hemorrhages, diarrhoeas, sweats, and many other phenomena, which accompany, or join themselves to the diseases; but which are not, however, to be considered as the immediate effects of it, or its causes; and, are, therefore, not to be ranged amongst the symptoms, properly so called; but, rather, as so many effects of the struggle there is between nature and the disease. (*a*) Sometimes, the re-establishment of the patient, is the happy consequence of this struggle; sometimes, nature yields in the conflict, and another disease takes place, or the patient dies.

There is, likewise, another species of symptoms, which are distinguished from the epigenomena, although they relate to them. These are symptoms that arise from accidental causes. They, nevertheless, merit all our attention, because they aggravate the disease, often render it mortal, combine with it other diseases, change, entirely, the form of the original complaint, disturb the salutary motions of nature, and impede the efforts of the remedies we employ. Sometimes, however, these accidents may have their use, and are, in certain circumstances, the sources of

(*a*) Our celebrated countryman, Sydenham, has very well defined fever, “*Naturæ conamen materiæ morbificæ, corpori valde inimicæ, exterminationem in ægri salutem omni ope molientis*”.

health. All the irregularities of the patient, may be referred to this head. These are but too frequent, in the absence of the physician, or from the advice of the ignorant. Sometimes they bring about a cure, without our being able to explain the reason of it. The observation of these symptoms, is, in general, of the greatest importance towards ascertaining the cause of each phenomenon; lest we should attribute to nature, or to our remedies, what is derived wholly from these accidental causes. The symptoms of the disease, are of the class of essential symptoms. The *epigenomena* are likewise of this class, every time they help to determine the nature of the disease, that they participate of its causes, and contribute to produce the efforts that nature opposes to the disease. Amongst the non-essential symptoms, are included those which depend on fortuitous causes, which have a remote affinity with the disease, and which may either exist, or not exist.

The essential symptoms have their distinctions. Some of them appear at the same time as the disease, and proceed, and cease, with it; and thus, are inseparable from it. There are others, again, which do not appear at all times, and in every period, and are, therefore, called *chronic symptoms*. The careful observer will collect both the one and the other, and, by distinguishing them, and their affinities, with each other, properly, will be enabled to know the present complaint, and to form his prognostic of what is to come. The definitions and the histories of diseases, derive from this alone the character of truth, which enables us to distinguish them, and thus, places nature, as it were, under our eyes, in her clearest point of view. The chronic symptoms teach us to distinguish

the degrees and the periods of diseases, and, by these, to regulate our conduct, with respect to the other symptoms.

Nor will the observer neglect the non-essential symptoms, although they are not so closely connected with the disease. The doctrine of crisis, depends, in a great measure, on a knowledge of the epigenomena. All these, lead to distinguish the differences of temperament, age, &c.

The ancients were acquainted with the doctrine I have here laid down; and the best physicians, amongst the moderns, have thought in the same way. Hippocrates, long ago, said, that there are, in all diseases, certain circumstances, which appear constant, and inseparable from them; that others, appear, in one or other disease, indifferently, although the diseases are different; that what is constant, depends on the individual and invariable nature of the disease; whereas, what is variable, arises from the concurrence of divers causes, and of different methods. Hippocrates, has noted, in his Aphorisms, every thing that is constant, as so many rules of the art. But with respect to variable circumstances, he was unwilling to arrange them amongst his maxims; and, has, therefore left them to the penetration of the observer.

In speaking of the genius for observation, I remarked, that the observer connects things together, in proportion, as he perceives them. The order of this connexion will be better felt, when I shall have shewn how the mind passes from the idea of symptoms, to the idea of diseases. The symptoms, as I have already said, are not the disease, itself; not
even

even when they appear with it, and continue, and cease with it; or, when, as the Arabians express it, they follow the disease, as the shadow follows the body.

A patient may know all the symptoms of a disease, and yet know nothing of the disease itself; because, the former fall under the evidence of his senses; whereas, the latter can be acquired only by reasoning. Reason combines the perceptions of the senses; and a disease is a combination of different symptoms, co-operating with, or succeeding, and connected with each other. The disease, therefore, differs from a symptom, although the latter disappears with the former; in the same way that the historical knowledge of a disease differs from the philosophical knowledge we may be able to acquire; *i. e.* a knowledge of the causes. We, therefore, pass from an idea of the symptoms to that of the disease; when, after having compared the present symptoms with the effects, which have formerly resulted from similar appearances, we draw conclusions as to the real disease. Every essential symptom, is a part of the disease; and, it is the union of all the symptoms, that constitutes the disease. A physician, has, therefore, done his duty, when he has properly seen, and distinguished, and combined, all the phenomena. We repeat it again, that we call *disease*, not every phenomenon that deviates from a state of health; but, rather, a concurrence of symptoms, which we know, from long observation, to begin, increase, diminish, and disappear, together.

Diseases observe a certain order amongst themselves. The knowledge of what is essential and non-essential, leads us to the knowledge of their resemblance, and diversity. The knowledge of the simple symptoms, leads us on to understand the more compound ones. Thus we proceed, from simple to compound diseases; and, from the idea of many particular diseases, insensibly arises the idea of their dependance on, and affinity to, the general system. These notions constitute the historical part of diseases, or nosology, which is wholly supported on the observation of the different combinations of the symptoms, and of their progress, and event, whether it be in life or death.

It was by a peculiar excellence in all this, that Hippocrates has rendered his writings so valuable. He observed, that all diseases do not appear at the same age; but that some are peculiar to certain times of life, and others, to particular subjects: that some diseases attack a whole country. He found, that these last, are sometimes long before they appear again; whereas, the others return often. He observed, likewise, that in certain countries, some diseases, have, from particular causes, established, as it were, their empire.

With respect to the progress and event of diseases, he has well remarked those, which are usually mortal; those, which soon terminate in death, rather than in a cure; and, lastly, those, which proceed slowly towards their termination. He did not fail to observe, that, in acute diseases, when left to themselves, and not stopped or disturbed by any improper remedies,

medies, there happened certain sensible changes, for the good of the patient; and, as these changes took place on particular days, he was extremely attentive, and accurate, in noting these days. As to the rest, he was content to write down these events, without concerning himself about their causes.

We see then the manner, in which the historical knowledge of diseases, leads us to the knowledge of them when present. In studying a disease at the bed-side, we have, at the same time, by this previous knowledge, all that the best physicians have observed on particular diseases. By judiciously comparing these observations with all that we remark in the disease before us, the nature of it becomes evident.

Nothing, therefore, is of more importance, than a true and authentic history, made in the way we have pointed out in the preceding chapters; for we speak, here, of an history drawn from phenomena, and not from hypothesis.

This historical knowledge, or knowledge of the phenomena, differs from the knowledge of the causes, or philosophical knowledge of diseases. To have an historical knowledge, is to be acquainted with diseases according to the steps of nature; because, there is supposed in this, only a knowledge of what is submitted to the senses; whereas, the mind does not always see with the eyes, in an inquiry after causes. As the certain is not to be confounded with the uncertain; so, neither is the history of the phenomena, to be confounded with the examination of the causes; and,

and, therefore, the causes should have no place in the history of the phenomena of diseases.

It has been long acknowledged, that Hippocrates chiefly owed his great reputation, to the attention with which he observed the most minute circumstances of diseases; and the accuracy, with which he noted all that had preceded them; the accidents, that accompanied them; and, whatever was of use, or hurtful, during their course. Hippocrates, has, in this, given us a true pattern, of what ought to be the history of diseases. Instead of inquiring after the causes of events, he contented himself with relating the events themselves, as he saw them take place; and he determined them with so much precision, that all good judges have learnt from him, how to distinguish diseases properly, and to judge of their event in similar cases.

It is certain, that an inquiry after causes is of great importance, and that we ought to aim at ascertaining the seat of a disease. But it is erroneous to suppose, that, by the causes, and the seat of diseases, we can foresee and determine their general signs and character. What, says M. Sauvages, is the end, that first presents itself to us, in the practice of physic? no other, than the different combination of the phenomena, which appear differently, according to the different periods of the disease; and, which are, nevertheless, connected by a certain chain, and in a certain order, according to the nature of each particular disease.

We do not always see the remote causes; even the proximate ones, generally escape us. We must, there-

therefore, learn to know diseases from their phenomena, before we begin to study them from their causes.

The concurrence of certain symptoms, leads us to the generic name which has been given to diseases, and, at the same time, to their species. An acquaintance with the species and signs, leads us to the whole historical knowledge of diseases ; but very often fails in giving us their cause.

It is, always, to the great disadvantage of the sick, that we deduce the first ideas of a disease from its essence or character. We, every day, hear of muriatic, or inspissated, or corrupted blood, without, however, seeing any proof of it. It is, nevertheless, from these arbitrary principles, that the generality of practitioners judge every day of the phenomena of a disease, and that they establish their indications and methods of cure. They, who have not possessed a talent for observation, have, in all ages, founded their doctrines and their practice on this piteous jargon. Never have they deduced their names, and definitions of diseases, from the phenomena that presented themselves to them ; because, they fancied their conceit was more flattered, by pretending to know the essence of every disease.

Names, likewise, that are taken from the proximate causes of diseases, afford only erroneous notions. It is true, that one is often obliged to adopt these names, because they are generally received, and we should, without them, not be understood, by the generality. We know, that the pretended rising of the
uterus,

uterus, has nothing to do with the vapours; and yet, the denomination of this affection, as founded on observation and Experience, would be, to most people, unintelligible. A lady, said to me, the other day, 'I am now certain, that my disorder is not the vapours, as you tell me it is.' 'What is it, then, madam?' 'Tis in the nerves.'

A disease can be named after its proximate cause, only when its causes are generally adopted; hence it is, that *pain in the side*, is better said, than *inflammation of the pleura*.

Definitions are therefore best, when taken from the phenomena, and not from the essence of the disease itself; consequently, *nominal* definitions are preferable to real ones. We know, that nominal definitions, consist in the enumeration of some properties, by which one thing may be distinguished from all those of the same species; whereas, real definitions prove, in what way a thing is such, or possible. Physic, ought, therefore, to be carried to the highest perfection, for us to be enabled to give, at once, a real definition; and yet, nothing is more common amongst physicians. One says; the *malum hypochondriacum*, is an embarrassment of the circulation, in the lower belly; another, that it is from a superabundance of atrabillious matter; a third, ascribes it to a bad conscience: each gives his definition, not from the phenomena of the disease, but according to some hypothesis he has adopted concerning it. We do well, therefore, to lay aside real definitions, until the proximate causes of disease can be ascertained in an incontestable manner.

A disease can be known, only by excluding all hypothesis. He, who without seeking for causes, attaches himself to the constant and inseparable signs of a disease, will rarely mistake one disease for another, unless he is guided by some arbitrary notions. So, that a physician, who observes the different symptoms, and knows, by their concurrence, how to form, to himself, an idea, that shall answer to them, without confounding the idea of all the symptoms, with that of each particular one, will have acquired a true notion of diseases. The natural progress of the human mind, says M. D'Alembert, is to rise from individuals, to species; from species, to genera, and from proximate genera, to remote ones: so, that at each step, we form a science, or add a new branch to the science already formed.

We often see many diseases of the same genus, and denominated and combined together, though very different from each other, and an attempt to cure them by the same treatment. The inflammation of the pupil of the eye, is very different from the inflammation at the edge of the cornea, although both resemble each other, in appearance.

Boerhaave saw a collyrium employed for the first of these, by means of which, the patient entirely lost his sight. It is for this reason, he directs, in the inflammation of the pupil, venæsection, without delay, *ad deliquium*; and then, that the eye be kept moderately warm, externally, that the inflammation may not be followed by suppuration, which would soon destroy the sight.

The inflammation of the pupil, will be distinguished by the acute pain, that every ray of light excites in the eye; whereas, the inflammation of the edge of the cornea is accompanied with much less pain. An inflammation of the cornea from a venereal affection, ought to be carefully distinguished from a common inflammation of that part. The remedies, proper to be employed, in one of these cases, would be altogether useless in the other. There is given us as a distinguishing mark of the first of these cases, a fleshy tumour, somewhat hard anteriorly. I have likewise seen this tumour in the second case; it continued during fourteen days, and the disease, accompanied by a total blindness, gave way only to the pediluvium, and to leeches repeatedly applied near the eye. In the first case, however, this tumour becomes so considerable, that it extends on every side; the eye, is from the first, of a yellowish white, and, as it were, purulent: a thick, acrid, glutinous, and yellowish serosity, flows from a number of little points; and these little points change insensibly, into little vesicles; neither these, nor the points, are perceived in the second case.

It appears, clearly, from this, how necessary it is to have a distinct knowledge of the species of diseases, which so many people confound, and treat, without attending to the difference there is between them. This happens every day, in the several kinds of sore throat, colic, phthisis, epilepsy, jaundice, &c.

We consider, as diseases of the same species, those which resemble each other, by constant and invariable characters. Different species, which resemble each other, by some common symptoms, but which have,

have, each, something particular, are said to be of the same genus. The resemblance of the genera, constitutes the classes. It is, sometimes, much easier to distinguish the genera of diseases, than their species: because, to determine the latter, we are often obliged to have recourse to causes, which depend on other diseases. The phthisis, for instance, may be owing to gonorrhœa, to the lues, scurvy, jaundice, chlorosis, tenia, too hastily cured; worms, asthma, hæmoptœ, morbus hystericus, diarrhœa, dysentery, diabetes, colliquative sweats, hæmorrhage, excessive flow of milk or feminal juices, fluor albus, obstructions of the intestines, and, above all, of the glands of the mesentery, stones in the kidneys or bladder, large external abscesses, or internal ones, as in the liver, spleen, bladder, intestines, or breast; an infinite number of disorders, neglected, or badly treated; particular constitutions, weakness of the vascular system, and corrupted fluids. Notwithstanding this variety, the determination of the several species, is not altogether uncertain, because they depend, in a great measure, on the remote causes.

The physicians of the Cnidian school, before the time of Hippocrates, made a disease of each particular symptom; because they were ignorant of the art of combining, under one general denomination and description, the circumstances of different diseases, by which they resemble each other. Hippocrates, says, indeed, that these observers had very well related all the patient's complaints, and in what manner they came on; and, in short, all that any person, who is not acquainted with physic, would be able to describe, after having informed himself of every circumstance that the patient should be able to tell. But, that they

omitted almost all the things that a physician ought to know, without being obliged to ask them of the sick.

These physicians were therefore deficient in not distinguishing the essential symptoms of diseases, from the non-essential, or those which are common to many diseases; and Boerhaave has very properly observed, that all the knowledge of the Cnidians, consisted in observing assiduously, every thing that had happened previous to a disease, and noting its progress, and event, without deducing any consequences from their observations, or referring the species to genera.

From this want of reflection arose species and names of diseases without number; as if a disease ought to vary in its name, because it differs in some slight circumstance, which does not occasion any essential difference. Hence it is, that the numerous species of fevers, to be met with in the works of Hippocrates, are considered as coming from the Cnidian physicians, and are, therefore, distinguished, by good judges, from the genuine writings of that great man.

Galen reproached the empirics with being guilty of the same error, and thus, for want of method, they augmented the number of diseases, *ad infinitum*.

Sennertus, and some others of the moderns, have fallen into the same mistake, by having divided diseases, with too much subtilty. We, therefore see, by all this, how necessary it is, not only to know
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how to distinguish the species of diseases, but, likewise, to know where the difference ends. Persons, who are not sufficiently attentive, or instructed, distinguish diseases as different ones, when they are, in fact, the same; and class together, others, which have not the least affinity with each other.

De Gorter has observed, that the species of diseases, are as constant as those of plants; and, that nature, appearing so constant, there was reason to hope, that, one day or other, diseases would be reduced to a systematic arrangement, with as much certainty as plants. Such a work, has long been a desideratum, in which diseases might be arranged in classes, genera, and species, from the just and determined characters of each. (b) It is certain, that
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(b) It was our countryman, Sydenham, and not De Gorter, who first mentioned this method of arranging diseases, though the latter did particularly recommend it. "All diseases, says Sydenham, ought to be deduced to certain and determinate kinds, with the same exactness, as we see done by botanic writers, in their treatises of plants: for there are diseases, that come under the same genus, bear the same name, and have some symptoms, in common, which, notwithstanding, being of a different nature, require a different treatment. Thus, it is generally known, that the word, *Carduus*, is applied to several kinds of herbs; and yet, a botanist would be guilty of an inaccuracy, who should content himself with giving a general description of the plant, and enumerating the marks wherein it differs from all others; and in the mean time, take no notice of the peculiar characteristics of every species, which distinguish them from one another. In like manner, it is
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there are many diseases; which, notwithstanding their apparent complication, have a character, as constant as the most simple plants. This, however, is not the case with all.

Be it as it will, it is by carefully attending to signs, that we learn to know diseases. The same disease, may, however, appear in very different lights, or assume the character of another: or, it may be attended with some singular circumstances. A very slight mark of distinction, often leads to this, and is, therefore, not to be overlooked. As to signs, considered in themselves, it is to the pathognomonic signs, that our observations ought particularly to be directed.

“ not enough for a writer to give us only the common signs
 “ or appearances of any disease; for, though the same variety
 “ does not happen in all distempers; yet, I hope to make
 “ it plainly appear, in the following sheets, that there are
 “ several, which, notwithstanding their being treated of by
 “ authors, under the same name, without any distinction
 “ of kind, are extremely different”. M. Sauvages had the
 merit of first executing a work on such a plan. He was a
 man of great learning, and incredible application, as will sufficiently
 appear by his work, which is, or ought to be, in the
 hands of every physician. He has, indeed, made too many
 distinctions; but, if we consider his work as a dictionary of
 diseases, this, perhaps, may be said to add to its utility.—
 Dr. Cullen’s arrangement is simple, concise, and natural, and
 easy to be retained. A physician, therefore, should have this in
 his memory, and Sauvages to refer to, in his closet. Other meth-
 ods have been published by Linnæus, Vogel, Macbride,
 and Selle, all which have considerable merit.

I have,

I have, hitherto, said nothing more of the phenomena of diseases, or of their connexion, than what may be considered as the general theory of signs. I shall speak of the application of all these reflections, in the chapter of the second part of the inquiry after the causes; in which, many phenomena will be found under the title of causes, because Experience has proved that they are so.

These causes have long been considered as simple phenomena, and they are still thought to be so in all diseases that are not accurately known: this uncertainty will continue, till their nature shall be better determined. My general design has been to prove, that the phenomena, are, in diseases, what the physician ought first to attend to. I will point out, here and there, by proper examples, how he will be able to distinguish, in the general idea of a disease, the symptoms, according to their order and connexion; and how, in different diseases, he will be able to judge of their variations and terminations; and this, by simple phenomena. It seems to be more natural, in my opinion, to speak here of the symptomatology, or theory of phenomena, only in a general way; and to relate the phenomena themselves, at the same time, with the theory of the causes.

The phenomena, if related here, and unconnected, would appear as a skeleton; whereas, in their proper place, they will become, as it were, an animated body.

I will,

I will, therefore, go on to the theory of signs. By the word, *sign*, I mean every circumstance of a disease, that informs us of its past or present state, or of its changes or termination. A sign, may, in general, be defined, to be a thing known, which leads us to the unknown. The signs of diseases, belong, in some measure, to the class of phenomena, because they are taken from what falls under our senses; but they, likewise, are often seated in the causes.

Every sign in a disease, is an effect of that disease; but every effect, does not lead us to the knowledge of its cause. It is, however, only by these, that we can arrive at them. The external signs of diseases, will, therefore, lead us to the knowledge of the internal state of things.

Boerhaave says, that nothing is more necessary in physic, than the signs; and, that it would be better to know nothing of medicine, than to be ignorant of these; and, that the physician ought to devote himself almost wholly to this branch. In another part of his works, he says, that no part of medicine is of more importance, than this of signs; and, that it is the first and most essential of all: the most essential, because, it is by these, only, we can inform ourselves, as to the state of the patient, and whether the disease is superior to the strength of the sick; the first, because it was the first employment of the earliest physicians. They observed, for example, in the pleurisy, with which they were not yet acquainted, a pain in the side, accompanied with a difficulty of breathing, quickness of pulse, and great thirst:

thirst: all these symptoms, were so many signs, which came under the senses; but still they were ignorant, as to what the disorder might be. At the end of two or three days, they saw the patient spit blood, and void a clouded urine, and with these signs recover his health. On the other hand, they saw others, who died of this pain, and that the side of the dead body, appeared of a brown and blueish complexion. They found, on opening these subjects, that this side was in a gangrenous state, both without, and within; and they, therefore, judged, that the disease had been a violent inflammation in the side; and they, therefore, called it *pleurisy*.

The signs, which point out to us, the present state of a patient, are the first to which we should attend. It often happens, however, that we can have no clear idea of the present, without having recourse to the preceding state of the patient. We endeavour to do this, by asking proper questions; and thus, by informing ourselves of all the changes that have happened to the body, both externally, and internally, we endeavour to fix on whatever is significative. Above all things, we must know at what time, and from what circumstances, the disease began, and in what part of the body it was first felt; what have been its progress and its effects; we examine, at the same time, every thing that has happened out of the ordinary course of nature, that we may deduce from all these, the necessary instructions. The state of the viscera, the proportion of secretions, and excretions, and of the quantity of mat-

ter that may remain in the body ; all these things require an equal attention, if we are desirous not to mistake the signs of diseases.

The progress of a disease, is to be ascertained, by attending carefully to the signs that its changes afford, and the circumstances that follow them. Some of these signs will be found, by considering the symptoms, and by sagaciously distinguishing what is temporary and occasional, from what is constant ; the proximate, from the remote ; and the essential, from the non-essential.

The wise author of nature, has fixed the course of the generality of diseases, by immutable laws, which are soon discovered, if the course of the disease is not interrupted, or disturbed, by the patient, or those about him, who are often the cause of most of the unexpected symptoms.

By means of these signs, we soon are enabled to know, at what period the disease ; is whether, in its increase, its acmé, or its decline. Boerhaave considered these signs as of so much importance, both in the examination and treatment of the sick, that he knew nothing which had a greater influence on the successful, or unsuccessful practice of physicians. It is from the critical signs, and from the state of the disease, that we are enabled to deduce those which inform us how a disease will terminate, whether in a cure, in another disease, or in death ; and, that we know the time, when the termination will take place. We arrive at this knowledge, by comparing all the other

other signs together, and deducing consequences from a great number of similar cases.

The ancient physicians must long have noticed the simple phenomena of diseases, and all the effects of nature, or of art, before they could be able to say to themselves, with probability, “an hundred times, in such a disease, with such circumstances, these signs have been the forerunners of such an event; they are, therefore, so now”.

The particular attention with which Hippocrates noticed, even the most minute circumstances, gave him that adroitness for distinguishing, as it were, at the first glance, one disease from another; and the art, with which he learnt how to compare similar diseases, in different subjects, and to estimate the symptoms, according to their just value, enabled him to foretel the event of diseases, with a degree of probability, which approached nearly to certainty; and to say, to those who were well, the diseases with which they were threatened. But this advantage, that hardly any other physician has possessed in the same degree that he did, was not the fruit of hasty observation. He must have been able to say to himself, why he was deceived at such and such times, in his predictions; before he could be able to prognosticate with that degree of certainty, which procured him the confidence of his contemporaries, and of all succeeding ages.

We observe what degree of hope or of danger there may be in a disease, by weighing thoroughly,

the past and present state of the patient, with the past and present state of the disease; and likewise, by measuring the strength of the patient, with the apparent powers of the disease, and by keeping in memory what has always truly followed the same circumstances, and the same signs. By an inquiry made with all possible care in this way, we are enabled to learn, whether our hope is decisively well grounded, or doubtful, or false. Montesquieu, in his last illness, enquired of his physicians, in what *ratio* were the hope and danger: they might have answered him in the Chinese stile; a tenth, is for life; and nine-tenths, for death.

We become more perfect in the prognosis, by bringing with us, to those changes in disease, called *crises*, the most attentive eye, and the most discreet reflection. We understand by crisis, the expulsion of morbid matter; which excretion is usually productive of a sensible change, and terminates either in the cure, or death of the patient. With respect to these crises, physicians distinguish, first, The time, during which the offensive matter remaining unchanged in the stomach, intestines, or vessels, or other parts of the system, the excretions, are wholly different from their healthy state, and the disease is exerting itself in a sensible manner. Secondly, The time, when the morbid matter, being sufficiently attenuated, and rendered different from its preceding state, and nearly similar, though not wholly so, to a healthy state, prepares itself for being thrown out of the system; at which time, the disease begins to decline. Thirdly, The time,
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at which the crisis really takes place. (c) It was by an exact observation of the whole course of a disease, by noticing the increase, decline and cessation of all its symptoms, that the ancients familiarized themselves with the theory of crises. They considered observation, and a circumstantial recital of these symptoms, as of the last importance; because it was by these signs, they were able to form their prognostic in diseases.

It is essential to know how to distinguish these different periods, and particularly that, in which all is determined by a crisis. The most experienced physicians agree, that this point is very difficult to attain; and, that there is always much danger, when we know not how to act on these occasions; because the signs of the crisis being easily confounded with the symptoms of the disease, we shall be liable to act amiss in these moments, which are to decide, perhaps, the life, or the death of the patient.

(c) The doctrine of morbid matter, as occasioning diseases, and then being critically expelled from the body in a mild and harmless state, which is what the ancients meant by concoction, begins now every day to lose ground, as being repugnant both to reason and facts. That there are, however, particular days in acute diseases, on which certain changes take place more frequently than on others, is agreed to by some of the most learned modern physicians. Dr. De Haen, Dr. Gaubius, and Dr. Cullen, may be mentioned as espousers of this doctrine, though they differ as to the way in which these changes are effected. There are others, again, of no little note, who deny the existence of critical days, at least, in these parts of Europe. It would be impossible to discuss this matter here. The reader will find much information on this subject, in De Haen's *Ratio Medendi*, the *Inst. Patb.* of Dr. Gaubius, Dr. Cullen's *first lines of the practice of physic*, Macbride's *Introduction to the practice of physic*. M. Le Roy sur le Prognostic, &c.

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These different periods, will be known, by attending exactly to all the circumstances which are essentially and immediately connected with life; such as the pulse and respiration; and to these, we may, perhaps, add the urine. The first period is not so difficult to discover; but the second and third are extremely so. Boerhaave has given the marks of approaching crisis, in a masterly manner. These marks are to be distinguished by the *vis vitæ*, which overpowers the action of the disease; whereas, the symptoms are derived wholly from the power of the disease, which is superior to the *vis vitæ*. The former appear only when every thing is prepared for a good crisis: whereas, the latter are seen in the first period of the disease; and especially, in its increase. The signs of crisis relieve the patient, which is not the case with the symptoms.

The signs of an approaching crisis, but which are not constant, are, in some degree, to be drawn from horripilatio, increased motion of the blood, after the sensation of cold; pain, inquietude, and generally some change in the state of the head and breast, in consequence of the increased rapidity of the circulation; now and then, from changes to be perceived in the parts, through which nature meditates the critical excretion; such as itching, tension, redness, tremor, &c.

The excretion will be, either of blood from the nose, or hemorrhoidal vessels, or from the uterus in women; or by abundant expectoration, or vomiting and diarrhoea; by a considerable discharge of urine, accompanied with a copious sediment; by sweat;

or

or by an abscess, in some part or other of the body. Sometimes the crisis consists in the concurrence of several of these excretions ; sometimes only one of them takes place.

It is certain, that these signs, and the phenomena, that follow them, would be mistaken for the symptoms of the disease, if they appeared at any other period, or were not soon followed by a sensible relief, or if they had any other apparent cause. Sometimes, too, they would be considered as most fatal appearances, at a time, when the patient is on the eve of recovering his health. This error is not uncommon with those who are but little instructed in symptomatology.

I had the care not long ago, of a young lady, ill with an acute fever, which terminated very happily. The patient's imprudence occasioned a relapse, and the second disease was much more violent than the first. On the seventh day, I found her much agitated, after having had a very restless night. All the symptoms were very alarming, and the heat was excessive. About noon, somebody came to tell me, that the patient was quite cold : I immediately went to her, and found, indeed, her face (which in the forenoon had been florid and burning with heat) very pale ; her lips were blue, her nails livid, and her whole body in a cold sweat. The patient seemed to be exceedingly weakened. The pulse, which in the morning was very quick, was now become quite slow. These circumstances led me to conclude, that a crisis was at hand, and I even gave the patient and her friends joy on the occasion,

occasion. They were not a little surprized at this, but a critical sweat took place the same day. Klockhof calls the critical sweat, which comes on at the beginning of horripilatio, an irregular phenomenon, although he admits it; and he says, at the same time, that in the crises which are speedily performed; and especially, with such-like critical sweats, the pulse not only becomes exceedingly low, but even altogether insensible. This rule, however, is not always without exception.

A bad crisis distinguishes itself from a good one, by being always premature; the fever which accompanies it, is likewise more violent, and the excretion less salutary, nor is the relief obtained by it, durable. They both of them resemble each other in some measure; but there are certain particularities peculiar to each, which do not escape the eye of the observer, if he attends carefully to every thing. The crisis is bad, if the disease changes its seat, or terminates in death. A prudent physician leaves a good crisis to itself, and endeavours to oppose himself to the bad one. The crises, which can neither be deemed good nor bad, are to be judged of, and treated according to, the indications which their essential character may afford. Hippocrates kept no account of trifling crises.

Although nature does not seem to observe the same regularity in every crisis, yet the reality of them cannot reasonably be doubted. Hippocrates did not always expect them in acute diseases, but his writings prove, in the most incontestable manner, that they did in general happen. With respect to
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our climates where the air is colder, or to those in which it is less pure than in Greece, we must expect some variation in the critical days, and in the signs that indicate them; because, besides the difference of climate, our regimen is less exact, and our care often more steady from the greater number and efficacy of our remedies.

The duration of a disease, depends on its particular character, and preceding causes; and on the regimen and curative means we employ, to imitate or assist nature in all her salutary efforts. There are many physicians who prefer saving the life of a patient by phlebotomy, to the waiting for the uncertain assistance of a critical hemorrhage; or to facilitate, by the same means, the eruption of the small-pox, rather than wait for it amidst considerable pain. They, likewise, had rather accelerate a sweat, by a plentiful use of some watery drink, than wait for a critical sweat. Hippocrates, himself, thought it necessary to support and assist nature by artificial means, in the critical terminations of pleurisy and inflammation of the breast.

All the signs relative to the prognostic, are very interesting for the physician, because it is particularly on this, that the patients, and those about them, interrogate him the most. He ought, therefore, to be able to foresee danger, and to go before it, as it were, with the necessary remedies; and not to disconcert or prevent a favorable crisis, or interrupt nature, by his operations. It was by their skill in the prognostic, that the ancient physicians acquired so much reputation; and it was this skill that led the Athenians

nians to erect a statue in bronze to Hippocrates, to admit him next to Hercules, in the Eleusinian ceremonies, and to vote a public maintenance for him and his family, in the Prytaneum, while Alexander, amidst all his victories, was hardly able to draw from them an acclamation.

In general, the true signs of diseases are either the effects of the disease, or consequences deduced from these effects. A skilful observer will, therefore, not always arrange the signs amongst the causes; he will not consider the rattling in the throat of a dying person, as the cause, but as the sign, of death. He will be very reserved in the judgment he passes on signs, considering as such, only what is derived from the essence of the disease itself, and establishing no prognostic, but on these grounds. By adhering to such a plan, he will every day acquire some new addition to his Experience. As he becomes acquainted with the true signs of individual diseases, he will be enabled to distinguish compound ones, and to regulate his conduct according to their true type, whether it be simple or compound.

The credit of physicians and physic, would be every day more and more established, if they were not too apt to precipitate their opinions. It is well, when a physician can be able to say to himself, "*I have never been in too great a hurry*".

Soon after I sat out in practice, a young woman came to consult me, at Berne. She told me that she had had an ague, and that when this was stopped, her belly began to swell. I asked her if she was
sure

sure she was not breeding: she seemed to be hurt by the supposition, and replied, with no little warmth, "that this was impossible, because she had never known a man". I therefore supposed the case to be a tympany. It was not long before this girl was delivered of a fine boy, and the disorder disappeared. I have known several physicians, not a little conceited of their own merit, who have made mistakes of the same kind. Even Drelincourt, who was professor of anatomy, at Leyden, was of opinion, that a dropsical girl was with child. Saltzmann, professor of anatomy, at Strasburgh, asserted that a young woman who was breeding, was dropsical; and it was but the other day, that the Margravine of Baden-Dourlack was treated as dropsical, till within four days of her being brought to bed.

A physician, who goes so far as to predict what is to happen, can, on many occasions, say only, that it is probable such an event will take place; sometimes, however, it is impossible to foresee this probability. The probability of a prediction, is founded on the effects that have been observed in similar cases: these effects are, therefore, to regulate the conduct of the observer. It is not supposed, that they who collected together the predictions of Hippocrates, especially his *Prænotiones Coacæ*, waited till they had seen as many similar cases, as were necessary to establish the highest possible degree of probability. Hippocrates had, indeed, before his eyes, the observations made by the family of Esculapius; so that he was able to enrich himself from their Experience. Notwithstanding this advantage, however, he was so well aware of the great difficulty there is in forming

a probable prognostic, that he does not hesitate to say, that it is very easy to be deceived. "The prognostic in acute diseases", says he, "is uncertain, and it is impossible to say, infallibly, whether the disorder will terminate in death, or in recovery". For this reason it is, that he complains of the physicians of his times, who, by their vain predictions, brought into ridicule, an art which is of so much importance in physic. Those Greek quacks were like the quacks of our days, who foretel that a patient who has not a catarrhal fever in the Winter, will have an eruption on the skin in the Spring; or, if he has not this eruption in the skin, that he will be mad in the Summer, or die in the Autumn.

Sometimes physicians, who are really not empirical ones, draw disgrace on themselves, by indulging too lightly in this taste for prediction. A Swiss physician, whom the good women consider as the most experienced in the town, merely because he happens to have more money than the rest of his brethren, was sent for, not long ago, to visit a very handsome lady. She had been long sick, and wasted insensibly. This loss of flesh was attributed to an ulcer in the lungs, in the liver, or in some of the other viscera. This great physician visited his patient most assiduously, and at length predicted certain death, if she should be attacked with diarrhœa. Another physician, who passed for a man of very moderate abilities, though he was acknowledged to be a good scholar, was next called in. This one gave his opinion, and at the same time, his prognostic. "Nothing", says he, "Madam, but a diarrhœa, can save you". A diarrhœa came on,
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and the terrifying impression made by the first and most fashionable physician, having more weight than the favourable prognostic of the second; the good lady embraces her husband and children, bids a last adieu to all her friends and relations, and then has sixty stools in sixteen hours, and recovers.

An empiric does not hesitate to assure the people, that he not only knows a disease at first sight; but that he can tell at once, what will be the event of it. It is indeed true, that an experienced physician will be able, on the first day of a disease, to judge, from the violence of the attack, the gravity of its causes, and other particular circumstances, that it will be a very dangerous one; but it is only in very rare and fatal cases, that we can be able to discover the signs which, from the first attack, indicate, that the termination of an acute disease, will be in death.

Will it be thought, that what I advance on this head from daily Experience, proceeds from a desire to scandalize my brethren; or that I give it as an observation sufficient to quiet an honest man, who with the knowledge he happens to possess, does his duty as well as he can? Do we not every day see pretended physicians, unworthy as they are of so respectable a title, proclaiming aloud, that such a disease is nothing at all; and this, merely, because it is not treated by them; that it may be cured by the most trifling remedies; and this, with the view of getting the patient into their own hands, though he is, perhaps, under the care of some respectable and skillful physician. If their artifice succeeds, they treat the patient in their own way, and continue their usual language during the first day or two. But
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if the disease, from its own nature, or their improper management, becomes more alarming, they then alter their tone, and foretel the death of the patient ; and this from the improper treatment of the other physician. If the patient recovers, they and the public are ready to cry out, " This new doctor has cured him". If he dies ; it was the first physician who killed him. " *We knew*", say they, " *from the moment we saw him, that he was irrecoverable ; but we were unwilling to alarm the patient or his family*".—It is in this way, that many of our modern quacks are seen to act every day.

It is only the smaller number of diseases, that present themselves by signs, which enable us to say, " *This is certainly such a disease, and no other*". We should at once know the signs, were we acquainted with the proximate causes of diseases ; but it is usually, only by the combination of many signs, that we are able to distinguish a disease ; and these same signs, if considered separately, would be unequal to the purpose.

Every disease may be said to be simple, if you will, because symptoms that are apparently the most complicated, are constantly founded on some very simple principle ; but to this, the human eye never yet has penetrated. It is true, that the principle of all the symptoms that are occasioned by a stone in the bladder, is known, the moment we feel the stone with the staff. But how many times, and in how many ways, has not this symptom, in this case, been referred to every thing but this true cause, in
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the very disease of which I am speaking? The books of Surgery sufficiently prove this. (*d*)

Since, therefore, only a very small number of diseases can be known by their decisive signs, we are obliged to judge of the present and the future, by combining these signs together, and reasoning from analogy. It is not always easy to determine the species of a disease, because it is not accompanied with signs sufficient to lead the observer to a determinate opinion. In these cases, therefore, he must necessarily reason from analogy; and this is often so difficult, that the similar circumstances, which occur in the most opposite cases, often deceive the most experienced physician; or the signs are so equivocal; that they may be equally applied to several species.

The greater number of species are less to be distinguished, by their decisive and particular signs, than by the combination of these signs. This

(*d*) When Mrs. Stephens offered her remedy to parliament, some medical gentlemen were named to ascertain its efficacy. A patient, who was to take this medicine, was searched, and the stone was felt in the bladder; he then took the remedy, and his complaints disappearing, he was again searched, and no stone being felt, it was agreed that he was cured, and that the stone was dissolved. Mrs. Stephens received her reward, and some time afterwards this patient died, and, on being opened, a large stone was found in a little pouch or sacculus, which was, in fact, a part of the bladder, and communicated with it.

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combination, is, in many cases, tolerably clear; but for all this, we are not to imagine, with ignorant practitioners, that this is always the case. As nothing is difficult in the eyes of these people, so nothing seems obscure to them. I love to hear a well-instructed physician say to me, as Sydenham does: "*I know not what to do, because I see nothing*". If we were to attend closely to the conduct of some of our pretended Esculapii, we should see how embarrassed they are by the least complication. Not that they are at much pains to penetrate the obscurity, but, as it is always to their interest to conceal their ignorance, they are constantly acquainted with classes, genera, and even the most minute species.

True physicians, on the contrary, are very often embarrassed in the treatment of diseases, because their characters are so complicated, that it is impossible to distinguish them at once. The eye of genius perceives some lights, by means of Experience; but prudence checks a reserved man, and obliges him rather to return ten times to a patient, and do nothing, than to do too much, and see nothing. A physician, who perceives all the signs of a given disease, thinks he sees that disease: he is to a certain degree, authorized to think so. It may happen, however, that this disease does not exist, because there are signs common to many diseases. We, therefore, ought not to say that we *see*, unless we perceive, pretty clearly, how these signs differ one from another.

There are some diseases, the complication of which, at once appears clear. It seems, sometimes,

times, as if the different types that form the compound one, appear, as it were, distinct, of their own accord; and thus enable the physician, to determine the event, of the different parts of the complication. But this would often be liable to deceive, because there are so many different diseases, which afford the same symptoms and type, at least to a certain degree, that a physician is always in danger of mistaking, when it is necessary for him to judge of the complication of several diseases. It is, however, true, with respect to fevers, that nature hardly ever complicates heterogeneous fevers, or fevers of different species; and yet, notwithstanding this, as the complication of these fevers may be occasioned by any other, than by that we suspect, nothing can be pronounced, with certainty, as to their true character. The knowledge of particular types, which make up the compound one, will then be of no use, in regulating the conduct of the physician, in these cases. He will do well, therefore, to wait, without being barely an idle spectator. And he is not an idle spectator, who knows how to watch the motions of nature, so as to be able to understand her hints.

Supposing that a patient has had some former disease, it is not easy to say, from the signs, how far that may influence the present complaint, or, whether the remains of that former disease, may not be considered, as the remote cause of this. What light will a physician derive from the signs, which an hereditary disease shall afford him? These complaints, which commonly do not appear in the unhappy heirs, till after a certain number of years,

are even then, very often changed and disfigured, according to the cause, which may happen to determine them, so that they appear quite different from the original disease. The signs, will, therefore, not be sufficiently characteristic of the disease: and cases of this sort, are not uncommon. I have seen patients covered with an incurable leprosy, whose father had had only the lues; and of this he had been cured, or at least, fancied himself cured, having felt no inconvenience from it, during the remainder of his life. The physician who had the cure of these children, when they came to years of maturity, gave them up as incurable. He had seen their disease return every year, notwithstanding all his care, and he assured me, that the signs of the disease he then saw, were no longer such, as he thought he had before seen.

There are, likewise, some very important cases, in which, we can absolutely derive nothing from the signs. A robust young man has been seen to live nineteen days, after a blow on the head, without any fever or other alarming symptom; and at the end of that time, to die, with the brain in a state of putrefaction. Dr. Hirzel, of Zurich, had occasion, not long ago, to see a man, who had, by accident, received from one of his friends, a mortal blow on the temple. The whole squamous part of the bone was fractured; under the fissure was a coagulum of blood which was spread over the *dura mater*, four inches in length, and one thick. The brain was compressed by this mass; externally, the wound was so slight as not to pass through the common integuments. The patient complained only of the head-ach, and
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was so little incommoded, as to send for a surgeon, only about two hours before his death.

At the opening of King George II. the aorta was found to be callous, at the lower border of its curvature, and so dilated, at its upper border, that it was become as thin as the finest paper. It was in that part that it burst, and the rupture was succeeded by a mortal hemorrhage; and yet, before his death, the King had not the slightest mark of disease, that seemed to claim any attention. He enjoyed very good health, and his usual ease of temper, even to the moment of his death. Six years before this, he had had an abscess in his breast, which had been perfectly cured.

An officer, who was in garrison at Huninguen, passed one evening very joyously with his mess. He went home to bed, seemingly in the most perfect health. The next morning he was found dead in his bed. As he had lived very moderately, nor had taken any thing extraordinary the night before, no one could undertake to say, what was the cause of his death. The surgeon opens him, and finds the thorax filled with coagulated blood.

In cases like these, what can the physician do, even though he should be called in before the death of the patient? What signs can inform him of the true nature of the complaint? These cases, as do a thousand others, unhappily prove, too clearly, with how much injustice, the public act, when they reproach physicians, with having seen nothing in cases,

which, absolutely, afforded nothing, that could be discovered.

The two cases, related by Boerhaave, of the Baron Van Wassenauer, and the Marquis of S. Auban, highly deserve to be inserted here. All physicians, who have read, are already acquainted with them; but all those who give their opinions of physicians, do not read. These two cases are so exceedingly curious, and, at the same time, so applicable to this part of my subject, that I must beg leave to give, at least, an abridged account of the particulars of each of them, as they are given us by that great master. Why, says Boerhaave, should we not deprive those people, who are so ready to asperse the conduct of true physicians, of every occasion of doing harm. They seem only to enjoy the vile pleasure, of fabricating and spreading all the popular notions, that are so prejudicial to sincere writers: while truth is examined only by corrupt judges, who know not, or consider not, its real worth.

The Baron Van Wassenauer, Admiral of Holland, a man of a sober disposition, subject to attacks of the gout, in other respects, healthy, robust, endowed with great qualities, and with an extraordinary firmness of temper, had accustomed himself to the taking an emetic, every time he thought he had ate too much. He conceived this method to be so very useful to him, that he continued to repeat it, as often as he fancied there was occasion for it. It was to no purpose, that his friends and physicians dissuaded him from this practice. Nothing, in his
opinion,

opinion, relieved him so much as a vomit; and he appealed, in proof of this, to his pretended Experience.

A messenger came one night to Boerhaave, to tell him, that the Admiral was in the agonies of death, perhaps already dead, at his country house. Boerhaave flies to his assistance, and finds him leaning forwards in his bed, and supported by three of his servants. In any other posture, his pain became excessive. He was unable to lie down, either on his back, or his side, or his belly, and much less could he sit on a chair. Boerhaave was the more alarmed at this appearance, because he well knew, with how much fortitude, the Admiral had supported the most violent attacks of the gout, without once losing his patience, or his courage, amidst the most excruciating pains. The groans of this man, who on other occasions, had been so patient and immoveable, alarmed him still more.

The Admiral, at the sight of Boerhaave, endeavoured to raise his head a little, and to give him his hand; but, on the least motion, or the least attempt to speak, he appeared to be borne down with excess of pain. It was in vain, therefore, that he attempted to describe his state; at each attempt, the sudden increase of his pain seemed to cut off his respiration.

One of the assistants then gave the following account. Three days before this disorder, the Admiral had been present at an entertainment, where he had ate a little too much. The next day, he
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determined to prevent, by abstinence, any ill effects that might result from this intemperance. The day before the attack, he had dined, with great moderation, and had got on horseback in good spirits, and seemingly in good health, without the least suspicion of any approaching disorder.

When returned from his ride, he abstained from supper, according to his usual custom. At half an hour after nine o'clock, he drank three cups of *carduus benedictus* tea, as he had often done before. He was asked, why he took the infusion that evening: "because," says he, "I feel something disagreeable in the upper part of my stomach, and I have a mind to wash it away". This sensation, he added, he had often felt before, and had always been relieved by vomiting. Soon after this, he puked, but with difficulty, and in small quantity: he then took four more cups of the same infusion, but without feeling any inclination to vomit, although he had drank so copiously. He directed more of it to be got ready, thinking to bring on a vomiting by force. While he was seated, and endeavouring to puke, he suddenly cried in a most horrible manner, and drew together all his servants, who were alarmed by his cries. The Admiral then told them that he had burst, or torn, or disordered something at the upper part of his stomach; and, that the anguish he felt was so excruciating, he must certainly be near his last hour.

He then recommended himself to his Creator: a cold sweat flowed from all his limbs; his face
and

and his hands became pale, and his pulse was no longer perceptible. He ordered them, to cover his head and breast with hot cloths, moistened with some strengthening liquors. They did this; but he found no relief: on the contrary, the disorder seemed to become more violent, and they judged that his death could not be far off. The physicians who were sent for, being at some distance, the Admiral, about half an hour after this, took, of his own accord, four ounces of olive oil, and of this he threw up a small quantity, together with some of the *carduus* tea. He then called for two ounces more, which he likewise drank, but without vomiting, or having the least inclination to vomit; and his disorder, all this time, went on increasing. Half an hour after this, he drank about six ounces of warm Dantzick beer, which he likewise kept down without nausea, as he did all that he drank afterwards.

This is what had passed, when Bye, a physician, whom Boerhaave has not left without his share of praise, arrived from the Hague. When he saw the state of the patient, he determined to give nothing of an active nature, till Boerhaave should come. These two physicians began, by considering the causes of so sudden and cruel a pain, before they proceeded to any remedies. Both of them were convinced, that unless these causes could be ascertained, no dependance could be had on medicines administered at random.

After the most careful examination, they could discover no other guide to direct them, than the
feat

of the pain, together with an uncommon sensation in the breast, of which the patient complained, but which, however, was inexplicable. In other respects, the Admiral was apparently healthy. He described the pain as being excessive, continual, and beyond all imagination. It did not relax a moment. He pointed out the seat of it to be at that part, where the oesophagus terminates in the stomach; he then cried out, that the pain spread with the same violence towards his back. Before his death, he felt this pain through every part of his breast. It appeared, that his tortures were never so great, as when he felt an inclination to belch, and that the air, being stopped in its passage, instead of rising, seemed to distract all the neighbouring parts. The disorder likewise increased, whenever he endeavoured to bend himself backwards, or to sit upright. This was all that his two physicians could discover, after all the inquiries and care imaginable.

At this part of the narrative, Boerhaave requests the experienced reader to pause with him awhile, and to reflect on the origin, the progress, the symptoms, and signs of this disease. He requires of him the first cause of these extraordinary effects. He had himself considered every thing, with the greatest care, and had exerted all the powers of his understanding, to find out some fixed principle, by means of which, he might unravel this obscure cause, and thus afford some relief to a disease, which hitherto seemed to be every moment increasing. All his speculations, however, were useless, and Boerhaave candidly confesses, that he found himself altogether unable to imagine, what could be the species, to
which

which this disease could be referred. It afforded no sign of inflammation. There could be no swelling suspected, capable of producing these cruel symptoms, and so suddenly. The preceding circumstances afforded no grounds for such a suspicion, and all the vertebræ were in their proper situation: nor could a displacement of the soft parts, within the thorax, be supposed capable of causing these torments.

There remained only some caustic and mortal poison to be suspected, as the cause of these horrid symptoms; but no poison could be thought of, the effects of which agreed with the circumstances of the Admiral's case. So, that of all the known causes of pain, not one could be fixed on as applicable to what he felt. It is well known that the gout, to which he was subject, might, by changing its seat, occasion pain, anxiety, and vomiting; but it never produces pains, so excruciating as those the Admiral complained of, in patients, who are in other respects healthy. Besides, the gout exerts its effects slowly, and comes on, and goes off, by degrees.

Of all known diseases, therefore, there was not found one, which could, by any affinity, throw any light on the Admiral's complaint, *a violent pain that had come on suddenly*. This was all that could be said with certainty. Boerhaave knew, from the Experience of all ages, that the most acute pain, when not attended with inflammation, may long be supported. He was, therefore, led to conclude,

that the Admiral's death would not not be immediate; and this was all his prognostic.

Uncertain as was the cause of this disease, it was necessary to think of something, which might calm the pain. All the remedies, however, that were given, though of a very mild nature, served only to add to the torments of the patient. Such was the melancholy situation of the Admiral, and of the two able physicians, who continued with him till five o'clock in the morning; when Boerhaave's affairs required him to be absent. At going away, he very prudently advised Bye to leave nature, a little while, to herself, by not attempting to give even the mildest and most innocent medicines; since the best chosen ones, seemed, hitherto, only to have increased the complaints. His advice was followed, but without success. The Admiral remained without any relief, till eight o'clock in the morning; and then Dr. Bye saw that the vital functions began to weaken, borne down, as it were, by the pain; but still there was no new symptom, that could throw any light on the disease. He then wrote to Boerhaave, and in his letter proposed some new remedies: Boerhaave agreed to their being tried; but their effects were equally fruitless with the former ones.

In these circumstances, the Admiral settled his affairs. Boerhaave returned to him about three o'clock in the afternoon. The Admiral received him with the greatest friendship, and, at the same time, told him, how inefficacious all the remedies had been, and how certain he was of the approaches
of

of death, which he ardently wished for, as a relief from his misery. Boerhaave perceived, indeed, that this period was at hand: and about five o'clock the Admiral expired, with the utmost composure.

The two physicians conversed together in private, and confessed to each other, that it was impossible for them to conceive the cause of this disease, much less of so sudden a death. They requested leave to open the body, and this was granted.

This dissection proved, what no man would even have suspected. Notwithstanding the great quantity of drink the patient had taken, previous to, and during the attack, and of which he had voided no part, the intestines, and abdomen, and bladder, were empty. Nothing but air made its escape, when these parts were opened. There was no appearance in either of these, which could throw any light on the nature of the disease. The stomach was almost empty, it contained no blood, or bile, and but very little remains of aliment. At this appearance, Boerhaave was so astonished, that he hardly knew whether he was dreaming or awake. These are his own expressions.

He then proceeded to open the thorax, with the greatest attention. The moment he had penetrated through the diaphragm, though he had taken care not to injure the lungs, a great quantity of air rushed out, and with no little noise. Boerhaave's wonder was increased by this, because this phenomenon ne-

ver happens, but when the lungs have been wounded. The lungs, in this subject, appeared so small and contracted, that they seemed to have been compressed, by some very great external force. The heart was perfectly healthy.

Boerhaave, on opening the breast, perceived a disagreeable smell. He said, at the time, that he should have compared it to duck, if it had proceeded from the stomach. Somebody, who stood by, and heard this, immediately observed, that the Admiral had, indeed, eaten part of a duck, at his last meal. It was, then, that Boerhaave began to conclude, that he was going to discover a very different cause, from any, which might, till then, have been presumed.

He no sooner raised the right lobe of the lungs, than he found it swimming in a watery fluid, which filled the whole of the right cavity of the thorax. To his great surprize, he found this same water, and in the same quantity, in the left cavity. He found this liquor to be similar to the little, that remained in the stomach. On drawing it off, it appeared of the colour of Dantzick beer, when mixed with an infusion of carduus. The smell of it, was exactly like that of duck's flesh. Upon the surface of this water was swimming, all the oil, the Admiral had swallowed. There was neither extravasated blood, nor pus, nor any corrupted matter, to be seen, any where. The quantity of fluid, found in the thorax, amounted to an hundred and four ounces.

The

The nature of the disease, now became more and more manifest. But it still remained to be discovered, how all that the Admiral had swallowed, had made its way into the breast. The left lobe of the lungs, was, therefore, carefully elevated, that Boerhaave might have a compleat view of the parts. Every thing appeared to him, to be in a healthy state, until he came within about two inches of the diaphragm, to that part of the pleura, which lies on the left side of the oesophagus. He there saw, distinctly, a part, which was very different from the rest, by its mobility, and by its being swelled; and, at the same time, of a blackish colour. This part was round, and about three inches in diameter. In the middle of it, was an opening, of about an inch and a half long, and three tenths of an inch wide. Boerhaave pressed this part slightly with his finger, and there immediately flowed out, into the cavity of the thorax, a fluid, which resembled that which was before there. His astonishment was extreme.

He next attempted (taking care, at the same time, not to confuse the parts) to introduce his fore finger, through this opening of the pleura. He found it soft, tumid, and open. Here, his attention, if possible, redoubled, because he was unable to discover, in this wound, any traces of the oesophagus. After having withdrawn his finger, a little, he pushed it upwards, and came, at length, to that part of the oesophagus, which was broken off.

Boerhaave could hardly believe what he saw. He called all the assistants to him, and shewed them, with the greatest astonishment, a thing that was so
unex-

unexpected. He then, with the same precaution, directed his finger downwards, and it passed easily into the stomach; and then, with a view of giving them a clear idea of the disease, he made an opening into the oesophagus, about three inches above the wound, and then introducing his finger through it, it passed out at the opening, which had occasioned the disease.

The cause of the Admiral's death, was, therefore, very clearly ascertained to be a laceration of the oesophagus; by means of which, every thing he drank, passed into the cavity of the breast, through the opening in the pleura, which took place at the same time. Boerhaave has proved, that the cardia, or upper orifice of the stomach, must have been closed, after the Admiral had taken seven cups of the infusion of *carduus benedictus*, and of which he voided but little; because, the more the stomach is filled, the more difficult it is to empty it. (*d*) We know, that when the stomach is full, the bottom of it comes forwards, while its upper part forms an angle, more or less acute, with the oesophagus. All the Admiral's efforts to vomit, were, therefore,

(*d*) This is an excellent observation, the truth of which, I have more than once seen confirmed, in persons not easily disposed to puke, who immediately after taking an active emetic, of antimony perhaps, have swallowed down a large quantity of warm water, and have so distended the stomach, as to be in great agony, though, at the same time, they were altogether unable to vomit.

chiefly

chiefly exerted on the diaphragm and oesophagus. It was in the midst of these efforts, that the oesophagus burst, being unable, any longer, to resist the motions of the stomach and diaphragm; and, being the more readily disposed to rupture, by the irritation, occasioned by the Admiral's finger, which he passed down his throat, in order to force a vomiting.

It was at that instant, that the Admiral cried out, and drew to him all his servants; telling them, with so much pain, that he had torn something within him. But it does not appear, that the oesophagus was lacerated to this degree, at once. The wound, was, probably, gradually increased, till the separation was complet. The stomach, when loaded with fresh drink, had driven it upwards, through this opening of the oesophagus; and thus, the cellular texture, becoming distended, the pleura had, at length, burst; and there was then a communication with the cavity of the thorax. The air, which abounds so much in alimentary substances, or which passed down the oesophagus, had likewise filled a great part of the breast.

The death of the patient, therefore, took place, when the air was so abundant in the stomach, and cavities of the breast, that the lungs were no longer capable of being dilated; and thus, a stop was put to respiration, and, of course, to life.

All these circumstances prove, that the Admiral's disease could be distinguished by no certain signs; and, that the best curative means, would have been
useless,

useless, even if the cause of the complaint had been known. It is, likewise, certain, that the same disease, happening now, in any other subject, would be equally incurable, notwithstanding Boerhaave's accurate description of the case. They must, therefore, be very unreasonable people, who will reproach a physician, amidst such difficulties, with not having known what was to happen.

There were certain surgeons, however, who were illiberal enough, to say, that Boerhaave ought to have made an opening into the thorax, in order to draw off the liquor, that had passed into it. But it was first necessary, to find out, that such an opening was required; and then, it must have been performed at both sides, which, from the admission of the air, into each cavity, at once, would have been, of course, fatal. Supposing the possibility of such an operation; would it not have been impossible to have saved the life of the Admiral, without finding out some new channel for the support of life? We see, by this, that there are, on all occasions, persons who are ready to blame, and who are never open to conviction, even though the truth lies before them.

The second case, I shall beg leave to introduce here, has been likewise related by Boerhaave, with the same energy, and exactness, as the former one.

The Marquis St. Auban, was a strong, active man, well formed, and of a very lively temper. He rode often on horseback; loved hunting; and all this, without being sensible of fatigue. He drank
very

very moderately, and ate indifferently of every thing; but preferred fat meats and butter. He had been a little ricketty, when about three years of age; but this complaint soon disappeared, as did a swelling of the abdomen, which came on, two years afterwards. When he was six years old, he was attacked with an acute fever, of which he recovered, without any disagreeable consequence.

During several years, however, he had been subject to an hereditary complaint. This was a painful enlargement of the hemorrhoidal vessels. These tumours became, at length, of a considerable volume, and poured out, every day, a quantity of blood. The blood, by being intercepted in its course, contracted so bad a quality, that the Marquis was unable to support, any longer, the pain he felt there. The inflammation of the parts, sometimes, seemed to threaten even gangrene. In these circumstances, he consulted Boerhaave, who, by the regimen and the remedies he prescribed, completely cured him. The patient recovered all his strength, and remained during eighteen months, without feeling any inconvenience. From the time that his cure took place, care was taken to attend carefully to him; that if any of the ill effects, that are so often occasioned by a suppression of the hemorrhoids, should appear, they might, at once, be obviated. Boerhaave had advised this, because Hippocrates, and all physicians after him, have observed, that a suppression of the hemorrhoids, often occasions other singular, and sometimes, more dangerous diseases; but, above all, from what had happened to the Marquis's father, who, having been subject to the same complaint, and

disabled by it from doing duty in the cavalry, had put a stop to it, by caustics, and incisions, and continued free from the disorder, during a year; at the end of that time, he was attacked by dyspnoea; and, soon afterwards, with hemoptysis, of which he died, in ten days.

But the most vigilant attention, during these eighteen months, could lead to no suspicion, that the functions of the body were, in any way, injured. Boerhaave particularly observes, as a notable circumstance, that the voice was, in no way, affected, during all this time; for the Marquis had a strong, manly voice, and often amused himself, by singing. He preserved the agility of all his limbs; and his breast continued to be so firm and well, that he never complained of fatigue, though he persevered in using a great deal of exercise. Nobody could breathe with greater ease, than he seemed to do. Such had been the situation of the Marquis, from his infancy, till the appearance of the hemorrhoids, and from their being cured, till within ten months and a half of his death.

We have placed all these preliminary particulars, nearly in the same light that Boerhaave has done; that every penetrating physician, may be able to give a full scope to his reflection, on this occasion. We are of opinion, that, in giving a history of this sort, it is right to relate, in a very minute, and careful manner, all that relates to the natural habit of the subject; to his preceding diseases, and their cure; together with his regimen, and mode of life; before we pass on, to describe the disorder, of which he died.

died. This care has often been despised, and ridiculed, by the ignorant, and the superficial; but we concern ourselves but very little, about such incompetent judges.

It was, therefore, not, till within ten months and a half of his death, that the Marquis began to find his health affected. About that time, he began to feel a constant pain near the left scapula. This pain, afterwards, extended itself to the left side of the breast. As the pain increased considerably, it was soon felt, through the whole inside of the thorax. A continual cough, rendered this pain still more acute. The patient could get no rest. When he coughed, it seemed to him, as if his sides were torn asunder. Physicians were called in. The disorder was attributed to the gout; and remedies for the gout, were, accordingly, prescribed.

Their attempts, however, were to no purpose. The pains seemed to assume a new force, after the use of these medicines, and fixed themselves, more and more, to the left side of the breast; so that it was found impossible to remove their seat. Blood-letting, opening medicines, oil, opium, &c. were all given, without affording any relief. To these pains, after a certain time, there was added another, and infinitely more excruciating pain, which was felt immediately under the left breast, and seemed, as the Marquis expressed himself, as if the inside of his breast was torn out, by violence. Tormented himself, to this degree, and tormenting all about him, by his lamentable and incessant groans, he could find no place, or situation, that afforded him the least

mitigation of his misery. He usually sat upon his bed, leaning a little forwards, and reclining his elbows on his thighs. In this situation, he, now and then, at intervals, got a little rest, and slept a few moments; but it was only to be waked soon, and on a sudden, by a cruel exacerbation of the same relentless pain.

Such was the situation of the Marquis, when Boerhaave was desired to visit him, with his physician in ordinary, the same Dr. Bye, whom we have already mentioned.

When Bye related to Boerhaave, all the particulars of the disease, and the remedies, that had been employed to no purpose, they acknowledged, to each other, that it was impossible to say any thing, with certainty, either of the seat, or the nature of the disease. Bye presumed, there was an abscess in the lungs; because he had observed the patient expectorate a viscid matter, after much agony. Boerhaave, however, differed from him, in opinion; because, excepting the singular and urgent symptoms of pain, the Marquis was, in other respects, healthy. He was then asked, what he thought of the nature of the disease. It was not, till after some considerable reflection, that he answered, that he really did not know what to think. He was inclined, however, to be of opinion, he said, from the symptoms, that the organs, destined to dilate the breast, were unable to support the contractions, essential to the action of each muscle; and the parts of the breast, which required to be dilated, resisted to this dilation, at each inspiration; and that, from this arose the violent

violent pain, the difficulty of breathing, and the sense of suffocation. The patient, and his friends, were satisfied with this reflection,

Boerhaave advised cataplasms to be frequently applied to the parts, that are the most in motion, in respiration; as the ribs, cartilages, and sternum. He likewise prescribed emollient drinks, a sparing diet, and the frequent inspiration of the vapor of some softening decoction. His prescription was followed, and the patient found himself much relieved. His friends began to indulge hopes of his recovery. The pain never returned again, with so much violence as before, even till his death. How blind, and precarious, says Boerhaave, is the joy of us mortals.

At length, the cough returned, as it were, with new violence. Nothing could calm it, but opium; but this calm was not of long duration: his expectation was exceedingly painful; and his respiration so difficult, that the patient was obliged to throw his neck backwards, to raise his breast; and, at the same time, to draw in his breath, with so frightful a noise, that it could be compared, only to the cry of a Bittern. Then, again, perhaps, for a few moments, the respiration would be more easy: but this relief was but trifling. He was obliged to be almost constantly seated upright, both night and day, with his neck stretched out, and his head raised. At the least change of posture, when he, by chance, slept for a moment, he felt the most horrid pain. If he attempted to lie down on his pillow, to repose himself for an instant, his face became
black;

black; the veins of his head, swelled; and his eyes, seemed to be bursting from their sockets. He appeared to draw his breath, only from the bottom of his entrails. An hideous hollow sound, seemed to be his only relief. If he attempted to speak, a few words usually revived all his pain.

Boerhaave remarked, with astonishment, that in the midst of this deplorable state, the pulse was still regular: nor did it begin to fall or vary, or become intermittent, till a few days before his death. The Marquis dragged on this unhappy life, till the 9th of July. At the least return of the pain, his face became black. A clyster, occasionally thrown up, was now the only thing, that gave him any relief. The great stricture of his breast, persuaded him, that his disease was hypochondriacal; and that this sensation was the effect of *flatus*. He was the more persuaded of this, because his appetite was so keen, that he would have eat to excess, if his servants had not taken care to prevent him. What he eat, served only to increase his pain.

About eight days before his death, the hemorrhoids began to return; and this gave him great spirits. He now began to have hopes of being cured, and even reproached his physicians, with not having attempted to bring them back sooner. On the 7th of July, he voided, by the anus, a considerable quantity of blood, which immediately coagulated. The next morning, the flux continued, and in greater abundance. The Marquis was so enlivened at this, that he attempted to make a few steps in his chamber, leaning upon his servants. The same day, he had

had a most craving appetite, and eat of many different things, swallowing every thing, just then, without any fear of suffocation. He likewise supped, with the same good humour; rejoiced at being able to do, what he had so long been incapable of; having, for some time before, not even dared to take any solid nourishment, without danger of immediate suffocation.

On the 9th of July, however, Dr. Bye found him again, in bed, after passing a most painful night. He seemed to be in the agonies of death. His face and neck, were considerably swelled: his face was of a dark complexion, and his eyes seemed as if starting from his head. He was able, however, to relate what had happened in the night. He mentioned the danger he had been in, of suffocation; and desired to be let blood. The physician refused this. You are determined, then, that I shall perish, said the Marquis. You would not, surely, wish, said Bye, that I should hasten your death. While he was speaking these words, the suffocation increased. His face became quite black. He attempted to bid adieu to the Marchioness, who was by the bed-side; and then, yielding to his last efforts to breathe, bowed down his head, and expired.

Bye immediately informed Boerhaave of this event, to whom he had every day communicated the state of the patient. Boerhaave came to him; and they were permitted to open the body.

Boerhaave, before this operation, was willing to reflect on all the circumstances of the disease; to see whether

whether he could not foretel, what he should discover on difsection; and thus, fay what part was diseafed. But this great man candidly owns, that he was unable to determine any thing, before-hand; and he requests the reader to judge, for himself, from the circumstances he has related, of what might be the essential caufes of the Marquifs's death, before he goes any farther.

The body was, externally, of a very healthy appearance; and, notwithstanding the Marquifs's long abftinence, and extreme sufferings, he was, by no means, emaciated. The abdomen only, was a little fwelled. This tenfion, rendered Boerhaave very attentive. He even ventured to fay to the affiftants, that they were going to difcover the caufe.

On opening the breast, there immediately fpouted out a ftream of limpid, yellow, infipid water: Boerhaave reflected a moment, on what this water might be, and whether it was not a dropfy of the breast, which had fuffocated the patient, after caufing fo many ills. It continued to flow, during the difsection, but in lefs quantity. The breast feemed to be filled with water, on looking into it, through this narrow opening. Boerhaave introduced his finger into it, and found the right lobe in its place, but adhering to the pleura. He went no farther, on that fide, but opened the left cavity of the breast, and found, there, no water: but the whole lobe, from the top to the bottom, was adhering to the pleura. He then, carefully, laid this part of the thorax open; taking care, not to diforder any part of its contents. The moment he had
accomplished

accomplished this, he saw, that from the neck, to the diaphragm, the whole of the cavity was filled with a white substance, of a sound appearance, except that, in the middle of its surface, there was a little tumour, which included a fluid, of a milky colour, but not purulent. This substance was pretty hard and uniform, through the whole of its surface. Boerhaave was stupified, at the sight of this singular phenomenon. This substance was much more considerable in the left, than in the right side of the heart; and even, entirely filled it. This was the reason, why the lobe of the lungs, was pressed so close to the pleura, on that side, that neither air, nor blood, could penetrate it, any longer. The first seat of the disorder, had, therefore, probably, been in the left cavity, under the scapula; and hence the pain the patient complained of, at the beginning.

This excrescence had, indeed, extended to the right side of the breast; but still, it was not so considerable there, as not to leave some room for the admission of air, and for some degree of action to the lobe, on that side, in respiration. The great vessels, however, and even the heart itself, with its pericardium, were pushed somewhat out of their places. The respiration could, therefore, only take place, in this lower part of the right cavity of the thorax; because, this excrescence being at the top of the breast, where it is narrowest, in the human subject, the lungs were pressed down, towards the inferior part of the cavity, where the breast becomes somewhat wider. This, therefore, explains the extraordinary efforts, made by the patient, to draw his

breath, from this lower part; the bronchiæ being compressed above, by this substance. Hence, too, the hollowness of his voice. Besides all this, the right lobe was found adhering to the pleura, only at the upper part of the breast. About the middle, it was seen attached to this tumour; so that here was another hindrance to the action of this lobe.

Boerhaave attempted to separate the whole of this substance, from the other parts, to which it was attached. It was impossible to take it out at once, and entire, on account of the pericardium, lungs, and great vessels. He extracted it, however, in the best manner he was able, and found the weight of it to be, six pounds and three quarters. As it was light, in proportion to its size, some idea may be formed of its excessive bulk. The whole of this substance, was as white as snow. Here and there, appeared a milky fluid, on cutting into it. No vessels, however, were to be perceived in it, excepting those, to which it was attached. Except the skin, that inclosed the whole, there was no appearance of any cauls, or cavities, or membrane, within. If any portion of this substance, was rubbed between the fingers, it melted like fat oil. It was, therefore, in Boerhaave's opinion, the true *steatoma*.

The displacement of all the thoracic viscera, was altogether singular. This substance had pushed the diaphragm downwards; and this had occasioned the tumefaction of the lower belly, which Boerhaave noticed, at the first, as a singular appearance. The pericardium, being united to the diaphragm, had followed

followed it, and, of course, removed from its natural situation. This was followed by a depression of the great vessels. We have already seen the state of the lungs.

Here, then, was a new example of human misery. A mild, unctuous, and innocent humour, occasioned, by its abundance, a singular disease, and death; and this, from its fixing itself, in too great a quantity, on parts, which can, in no degree, be compressed, without danger. We learn, from this, therefore, that, in extraordinary diseases, we may reasonably suppose some hidden and unknown cause, which anatomy alone, can be likely to explain.

It were to be wished, says Boerhaave, that the experienced physician might be able to discover the source of a similar complaint, from his first seeing the patient; and that he might, then, be able to prevent this fat from spreading, so as to form so destructive a mass. We might then hope, to be able to prevent the disorders it occasions; because, it is impossible to resolve, or dissipate, a steatoma that is once formed, unless its situation should admit of manual operation.

Boerhaave confesses, that he knew no medicine, that would prevent a beginning steatoma from enlarging; and that which is not to be done externally, must be much less possible within. Every time, therefore, says he, that I hear great talkers, vaunting their remedies, for this purpose, I wish to see them cure schirrous tumours; occult, and ul-

cerated cancers ; meliceris ; steatoma, &c. by certain means ; and thus. give us a proof of their art. As for my part, I have observed, that all prudent, and experienced physicians, allowed their insufficiency, on these occasions, though they did it with regret.

It would seem, as if Boerhaave might meet with some reproaches, for his method of treating the Marquis, before this complaint.

Nothing could be more grateful, to the ignorant, and illiberal, men of little minds, and of a narrow way of thinking, than an opportunity of censuring so great a genius, as Boerhaave. There are, even now, persons of this disposition, who, in reading this narrative, will, perhaps, be led to ascribe the disorder of the Marquis, to the suppression of the hemorrhoids. But the great Boerhaave has replied to these frivolous judges, by saying, that a steatoma cannot be derived from the cure, or the suppression of the hemorrhoids ; that he had cured them, neither by caustic, nor by any other external application, but by mild, emollient, and deterfive remedies ; and that no signs of plethora had been perceived, when the hemorrhoidal flux began to diminish. In short, says he, with his usual candour, and dignity of mind, let every one judge freely, and sincerely for himself ; I have described the disease, such as I saw it.

The physician, therefore, as well as the mathematician, has fulfilled his duty, when he has proved, that a difficulty, is, in every sense, and point of view,

view, inexplicable. He, who proves a disease to be impenetrable, and, of course, incurable, deserves as much of our esteem, as he, who points out the seat of a disease, and the method of curing it.



B O O K IV.

*Of the Observations of Signs, deduced from
the leading Phenomena of the Animal
Oeconomy.*

C H A P. I.

Of Signs derived from the Pulse.

IT is difficult to understand every thing, that is submitted to our senses ; and still more so, to discriminate them properly. Sometimes, this may arise from want of sagacity ; and, sometimes, from a failure of attention. Discernment, or a readiness to distinguish one disease from another, is founded on an exact knowledge of the signs of each. Sagacity is a gift of nature ; whereas attention is merely an effect of our will. Both these are required, to give discernment ; and, therefore, without such a combination, there can be no true talent for observation.

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The first, and, in these times, the most general sign of disease, is derived from the state of the pulse. The ancients, unless we consider the Chinese as such, do not seem to have attended much to this matter. Hippocrates, was, indeed, acquainted with the pulse; but he seems to have been at little pains to ascertain the number or variety of its pulsations. Herophilus, was, probably, the first, who considered it as a leading sign, in diseases, and who aimed at ascertaining its variations, with exactitude. Galen was desirous of carrying his observations in this way, to a degree of minuteness; but, in the sixteen books he has left us, on this subject, we often find him indulging in idle speculations, and endeavouring to establish rules, which had their foundation only in his imagination, and the vain philosophy of the times, in which he lived. The moderns, have, at different times, attempted to improve this branch of the art, by adding to the discoveries of their predecessors, or correcting their errors. Solano was persuaded, that he had discovered a number of different pulses, which, till his time, had been unnoticed.—Other physicians, since Solano, have followed him, in endeavouring to derive new indications from the pulse. (*n*)

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(*n*) "All, who begin the study of physic", says the learned and ingenious Dr. Heberden, "must find, in the doctrine of the pulse, as collected from medical writers, by Bellini, and others, a great deal, which they do not understand: and all, I imagine, who have advanced a little in the practice of physic, can have very little doubt of its not being understood
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The intention of the physician, when he feels the pulse of a patient, is to ascertain the degree of strength, with which the heart drives on the blood into the arteries. It were to be wished, then, that the observations in this way, might be made, by carrying the hand immediately to the breast; but the

“ by the authors themselves. There can be no pretence, before this audience, for wasting any time in shewing, that minute distinctions of the several pulses, exist chiefly in the imagination of the makers; or, at least, that they have little place in the knowledge and cure of diseases. Time, indeed, has so fully set them aside, that most of these names of pulses, are now as unheard of, in practice, as if they had never been given: and it may be doubted, whether some of those, which are retained, are perfectly understood, or applied, by all, to the same sensations, and have, in every one’s mind, the same meaning. I have, more than once, observed old and eminent practitioners, make such different judgments of hard, and full, and weak, and small pulses, that I was sure they did not call the same sensations by the same names.

“ It is to be wished, therefore, that physicians, in their doctrine of pulses, and descriptions of cases, had attended more to such circumstances of the pulse, in which they could neither mistake, nor be misunderstood. Fortunately, there is one of this sort, which, not only on this account, but likewise for its importance, deserves all our attention. What I mean, is, the frequency, or quickness of the pulse, which, though distinguished by some writers, I shall use as synonymous terms. This is generally the same, in all parts of the body, and cannot be affected by the constitutional firmness, or flaccidity, or smallness, or largeness of the artery; or by its lying deeper, or more superficially; and is capable of being numbered, and, consequently, of being most perfectly described, and communicated, to others”. *Medical Transact.*
Vol. II. S.

delicacy

delicacy of our manners prevents this, especially amongst female patients. The degrees of the celerity, strength, and regularity of the pulsations, are, therefore, the phenomena we seek after, at a distance from the heart, by feeling the artery at the wrist.

According to the difference of climate, season, age, sex, temperament, passions of the mind, &c. the pulse will be found to beat, with more or less frequency, in a given time. By knowing the state of the pulse, in a healthy person, we are the better enabled to ascertain the variations it undergoes, in the same subject, in disease; because, although the causes we have mentioned, may, and will, occasion considerable differences, yet some degree of affinity will, usually, be perceived, by the skilful observer. The common effect of fevers is, to augment the number of pulsations. The degree of quickness should be determined, by a stop watch. Let us suppose, that, in a middle aged person in perfect health, the pulse beats, from seventy to eighty strokes, in a minute: If we find it, at any time, beating eighty-five, we may conclude, that there is, already, some degree of fever. At a medium, in fevers, the pulse will be found beating, perhaps, an hundred and ten, or an hundred and twenty strokes, in a minute.—The greatest quickness of pulse, may be said to be, an hundred and forty; because, beyond that number, it is impossible for the finger to distinguish the pulsations. (o)

VOL. I.

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(o) " Though it be difficult to count above 140 strokes, in
 " a minute, if they be unequal in time, or in strength; yet,
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It is easy to determine the degree of fever, by the number of pulsations. A man in health, ought, in general, to have a somewhat slow, but not a weak pulse. In all subjects, the pulse beats more slowly, in the morning, than at night. But whenever the pulse varies much from its natural state, we may conclude, there is fever, unless this quickness appears to be the effect of some transitory cause; such as exercise, fear, &c.—If the number of pulsations increases every day, in this fever, the danger will be proportioned to the other circumstances attending it; because, in acute fevers, the number of strokes is always the greatest, in the hour of death. If the number of strokes be much greater in the morning, than it ought to be, in health, we may expect, that the ensuing night, will be a bad one. But if the pulse, instead of augmenting in quickness, becomes slower at night, we may conclude, that the disease is on the decline.

In chronic diseases, that are not attended with fever, the number of strokes, is sometimes less, than in health. This sign is, often, of extreme importance, in these diseases; and the physician would do well, to count the diminution, as well as the increase, in the number of pulsations, by means of his stop-watch.

“ where they have been very distinct, I have been able to count 180”. This quotation is likewise, from Dr. Heberden’s Paper, referred to in the former note.—The reader will find in it, many other curious, and useful observations, on this subject. S.

Every

Every physician, who has seen any thing of practice, knows how often the hysteric passion assumes the appearance of other diseases. A great diminution in the frequency of the pulse, is, in many cases, the only sign of the most painful attacks of this complaint, which might, otherwise, be mistaken for an inflammatory disease; because, the most acute inflammations, do not always announce themselves by fever; (*p*) and the slowness of the pulse, affords a much more certain diagnostic, in these cases, than the paleness, or clearness of the urine. The patient may be supposed to be nearly recovered from this attack, when the pulse becomes quicker and fuller.

The degree of strength, with which the pulse beats, is to be estimated by the state of the patient, when in health. In weak, and delicate subjects, it may be expected to be feeble, and scarcely sensible, and *vice versa*. With respect to strength, the pulse may be said to be either full, or strong, or hard, or soft, or weak. I consider the strong pulse, and the full pulse, as the same; at least, they always occur together, in healthy subjects. A strong man, in good health,

(*p*) It is, by no means, a constant effect of pain, to quicken the pulse — A patient has felt the most excessive torture, from a gall-stone passing through the ducts, without having his pulse, in the least, quickened.—Dr. Heberden considers this natural state of the pulse, joined with the vehement pain, about the pit of the stomach, as the most certain diagnostic in this illness. S.

has, commonly, a full, but slow pulse: this proves the quantity of blood, and the power of the heart, and that there is no morbid irritability. When the pulse is both full and quick, we may argue some change in the system; and this change will appear to be still greater, if the artery rises a little more, and conveys the idea of strength.

The pulse is strong and quick, in continued fevers that are not attended with inflammation, and likewise in intermittents. Boerhaave considered this pulse as a good sign, if it was equally strong, in every part of the body. It is liable to deceive us, only in apoplexies; because these are sometimes occasioned by obstructions in the abdominal viscera,

The pulse may be said to be hard, when, by the smartness of its stroke, it strikes like a hard substance against the finger. Sometimes the pulse is hard, in old people; because, in very advanced life, the arteries harden, and even become ossified, or cartilaginous. In these subjects, however, the hardness of the pulse, does not denote illness, till it is accompanied with frequency. Hardness, and frequency of the pulse, when joined with local pains, are the diagnostics of inflammation, in acute fevers. While this hardness of the pulse continues, we may conclude, that the inflammation subsists. It proves, too, at the same time, that the patient's strength is kept up, and of course, that more blood may be drawn off.—To this observation, however, there are several exceptions,

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The pulse is soft, when the blood, notwithstanding the fulness of the artery, is so feebly driven forwards, that the artery rises but very little. In dangerous peripneumonies, the pulse is soft, because the cellular substance of the lungs is so distended with blood, that the left ventricle of the heart, can drive out but a very little of this fluid at a time. It is, therefore, a favourable sign, when the pulse becomes fuller, after expectoration. This change proves, that the course of the blood, through the lungs, is performed with more freedom.

The pulse is said to be weak, when the artery beats so feebly, as hardly to afford any perceptible impression to the finger. This sort of pulse, sometimes occurs in fat people, in good health. Sometimes, too, I have met with it in people, whose arteries were so small, as hardly to be felt. The pulse is commonly weak, in malignant fevers. It is likewise, generally weak, and very quick, towards the close of acute diseases, that terminate in death. In general, this sort of pulse is a dangerous sign in these diseases. The pulse is commonly very hard, in the beginning of an inflammation of the intestines; and if the remedies made use of are ineffectual, the pulse, about the second or third day, becomes very soft and quick. When the intestines are in a gangrenous state, the pulse, from its extreme smallness, becomes almost imperceptible. Weakness and slowness of the pulse, joined with local pain, indicate spasm: and extreme weakness, joined with extreme slowness of the pulse, denotes syncope to be either present, or about to take place.

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The order and affinity, which the pulsations preserve among themselves, afford a vast field of observation to the inquisitive mind; and it is in this, perhaps, that physicians, who have wandered after imaginary discoveries, have been the most led astray.

By order, here, I understand the manner, in which the strokes of the artery follow each other. The pulse beats with uniformity in a natural state, at least, in the generality of subjects. We are aware, that in some persons, the pulse is irregular and intermittent; different, perhaps, in one arm, from what it is in the other. These exceptions, however, are rare. The more the pulse continues in this state of equality, the more perfect is health. The more it deviates from this state, the greater reason we have to suppose, that something is defective in the animal economy. This state of uniformity in the pulse ceases, the moment the circulatory powers, are, by any means, disordered. In general, the pulse may be considered as unfavourable, in proportion to its inequality, and frequency.

Without aiming at too great subtilty, or minuteness, we may, I think, admit of three kinds of inequality in the pulse. Of these, the first will be, the intermitting pulse; the second, the rebounding pulse; and the third, the unequal pulse, in which, each subsequent pulsation increases in strength.

The first of these, is attributed to a deficiency of blood in the artery, or to the weakness of the heart. We meet with it after several pulsations, or after
only

only one or two. When it occurs only now and then, after many pulsations, it is but of little consequence; but there is danger in it, when it happens frequently. The latter is often observed in malignant fevers, and the plague; because, in all these, the *vis vitæ* is exceedingly weakened.

I have frequently observed this kind of pulse, in chronic diseases, without its seeming to have any bad consequences. (*q*) I have likewise observed it in persons, who have been worn out, by want of sleep, and by pain. This intermitting pulse often occurs, in acute diseases of the breast, without being followed by diarrhœa, as Solano asserts. An intermitting pulse is not unusual, in dying people.

The rebounding pulse, (*r*) is said to take place, when two quick strokes are followed by a slow one. I observed this kind of pulse, every day, for some time, in a female patient, who had a fever of long duration, after delivery, and who recovered. I have

(*q*) An intermitting pulse, is, by no means, a dangerous sign. It frequently occurs in old people, and, sometimes, in younger persons, of the best health. Dr. Heberden observes, that he has met with two persons, who, when perfectly well, always had pulses very unequal, both in their strength and the spaces between them; upon their growing ill, their pulses constantly became regular; and it was a never failing sign of their recovery, when their arteries began again to beat in their usual irregular manner. S.

(*r*) The *pulsus dicrotus* of the ancients.

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likewise observed it, as have many others, in aneurisms. Solano assures us, that it announces an hemorrhage at the nose. Another writer goes so far as to say, that it is the forerunner of death. A pulse of this sort, may, indeed, have preceded both: but are we, from this, to consider it as a constant sign? Sometimes, instead of two, we observe, three quick strokes, in succession, and then a slow one.

The unequal pulse, (s) which gradually increases in strength, has been noticed, by Solano, as announcing a sweat, when the pulse is soft; and the jaundice, when it is hard.

We often acquire a knowledge of diseases, and, more particularly, of their crises and termination, by observing the signs afforded by the pulse. But the reasoning we deduce from these signs, should be drawn with the greatest circumspection. A single accidental cause, will be able to occasion great variations in the pulse. It will appear to be alarming, perhaps, when there is no degree of danger. If, in a case of this sort, a physician continues to derive the indications from such changes, he desires, as it were, to see things, which have no real existence. Every body knows, that the most singular symptoms, and many variations of the pulse, are excited in children, by worms. Diseases may, therefore, be, in certain cases, so disguised, as to be scarcely

(s) Solano has given it the name of *pulsus inciduus*. S.

distinguishable. The pulse may, in an instant, become different from what it was the moment before; especially in nervous complaints. There is hardly any sort of pulse, that I have not observed, in hysterical patients, in the space of four and twenty hours. The most dangerous sorts of pulse will be found in a patient, who feels a violent compression of the breast, about the region of the stomach; and yet, the moment the inconvenience is removed, his pulse will resume its natural beat.

In advanced life, the pulse is no less variable, whether it be in health or in sickness. In some, this difference will proceed from an aneurism; in others, from diminished irritability.

I attended the mother of four celebrated men, in six several attacks of a violent inflammation of the breast. All these attacks happened, between her 70th and 76th year. From five of these, she recovered. This lady experienced, each time, a very considerable degree of fever; and I often had occasion to observe, that, in the space of an hour, her pulse went through several variations of intermitting, rebounding, &c. that it sometimes rose considerably, and, the next moment, was as much sunk. Sometimes, all these changes occurred in succession. The moment the patient began to mend, and this usually happened by means of expectoration, which was, indeed, somewhat difficult, the pulse became more regular. After these attacks, she perceived no other irregularity in her pulse, than that it was now and then, though not often, intermitted. During the intervals, she enjoyed the best health. The precepts

of almost all our medical writers, would have assured me, that this state of the pulse, was a very dangerous one, if I had not attended to the particular constitution of the patient, rather than to their doctrine, in this case. (*t*)

I have likewise observed, in different parts of the body, and at different times, a very unequal pulse, both in frequency and strength. A widow lady, thirty-nine years of age, had long complained of rheumatism, and of a singular coldness, which extended down the right leg, to her foot. During several weeks, I reckoned fifty strokes in a minute, in her right arm, and from eighty to ninety-two, in her left. The pulse was very weak, in the former, and constantly strong, in the latter. The patient complained, now and then, of considerable heat; but this was less felt on her right, than on her left side.

(*t*) I was lately consulted by an old lady, who, some months before, had felt a slight attack of palsy. The pulse of this lady, sometimes, varied more than twenty strokes in a minute. It was, occasionally, intermittent; and, now and then, there was a quick succession of strokes.—Two months after this, I learnt, that the patient was still living, and, seemingly, much recovered: her pulse was become more uniform.

These observations prove to us, that many particular circumstances may occasionally vary the pulse; and that we, therefore, shall do well, not to be influenced in our prognostic, or method of cure, by this sign alone.



C H A P. II.

Of Signs derived from the Respiration in Diseases.

THE moment, in which the foetus may be said to pass, from a state of vegetation, to animal life, is that, in which he breathes for the first time. Respiration is, therefore, the second general object, in the study of diseases. Hippocrates was the more particularly attentive to this, as he knew but very little of the theory of the pulse.

As a part of semeiology, the state of the respiration is of the utmost importance, because it conducts us, as it were, to a knowledge of the internal character of acute or chronical diseases. In acute fevers, however, that are not accompanied with inflammation of the breast, we are not so scrupulously to consider the respiration as a sign; and still less in the plague: because the pulse may be considerably increased in number, without a proportional increase in the respiration. It cannot, indeed, be denied, that in a healthy state, we observe a certain number of pulsations, and a pretty regular number of inspirations and expirations, in a given time.

time. This is usually in the proportion of four to one; so that the pulse beats four times, while we breathe once. This having been observed to be the ordinary affinity, between the pulse and the respiration, many physicians were led to conclude, that the same *ratio* held good, when the number of pulsations was increased; but Baron Haller has sufficiently proved, that the respiration may be very slow, with a slow, as well as an accelerated, motion of the blood, provided the pulse be small, and that only a small quantity of blood enters into the lungs at a time. If much blood is thrown into the lungs, from the heart, the respiration will, necessarily, become more frequent and laborious.

In a state of health, the respiration is commonly slow, equal, and easy. The less it deviates from this state, after considerable motion, or the sooner it returns to it again, the more it argues of health. It becomes a leading sign in disease, in proportion to this variation; but, in attending to it, we should be careful not to view it in the abstract. It will be always prudent, and even necessary, to consider, at the same time, all the other signs of the disease, because the respiration is not always so uniformly affected, as we might, perhaps, expect. We shall sometimes find it free, and uninterrupted, even in the most dangerous circumstances.

The respiration is said to be great, when we inspire and expire a considerable quantity of air at once. Other writers, before me, have taught this, by observing, that in speaking of great respiration, they alluded, not to an increased circulation, but to
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a larger quantity of air being taken into the lungs. And this is the reason, why physicians, in general; are agreed, that in such a respiration, the motion of the thorax, diaphragm, abdominal muscles, lungs; and likewise of the circulatory organs, is free; and, that the *vis vitæ* is in a good state. A great respiration can never announce any thing bad, in a disease.

The respiration is small, when we receive, and expel, from the lungs, only a small quantity of air at a time, although the breast rises considerably, each time. Hippocrates, long ago observed, that great breathing is great, externally, and small, internally; because, in the first case, there is only an appearance of difficulty; whereas, in the second, there is more of reality than appearance. It follows, from all this, that a small respiration, opposed to a great one, may be considered as indicating an embarrassment within the thorax, either from extravasated blood, or any other cause, that, by compressing the trachea, or by other means, prevents the free course of the air. Boerhaave, therefore, has done well to say, that a small respiration is always a dangerous sign.

The respiration is frequent, when the motion of the lungs is in very quick succession, and the quantity of blood, that passes through them, is great. This frequency of breathing has, for its cause, an increased effort of the organs of respiration, but not any obstruction within the lungs themselves. Running, or other violent exercise, increases the respiration in people of the best health. Their lungs,
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however, are not obstructed. This sign, therefore, proves to us, in acute diseases, that a greater quantity of blood passes through the lungs in a given time, than is the case in health; and this can never be advantageous.

Circumstances, opposed to those we have just mentioned, produce an opposite state of respiration. In general, we may consider it as a good sign, when the patient is not obliged to exert any violent efforts in breathing; and when the blood passes into the lungs, only in a moderate quantity, and not with too much frequency. It will be a very favourable appearance, when the other signs are not alarming.

The respiration may be said to be very frequent, when the intervals between the inspiration and expiration, are as short as possible. This is constantly a mark of some obstacle to the free motion of the lungs. Its most frequent cause will be an extravasation, within the cellular substance of the lungs; and of course, this is a state of inflammation. Frequency of respiration, may be accompanied either with violent pain, or with a simple sensation of stricture.

It will be perceived, by the other signs, whether this frequency is to be ascribed to an effusion of water into the thorax; because, as hydrothorax very often follows peripneumony, so peripneumony does not unfrequently succeed to hydrothorax, as Dr. Storck of Vienna, Dr. Monro of London, and others have noticed. A very frequent respiration is, therefore, to be considered as a very dangerous symptom in inflammation of the breast. In cases
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of dropfy, it denotes a collection of water within the cavities of the thorax or abdomen; and this is always attended with danger. I have observed, that in hydrothorax, the refpiration is but little affected at the beginning of the difeafe. In inflammatory difeafes of the breaft, in which there is a collection of blood and phlegm, the refpiration is very frequent, and accompanied by a rattling in the throat. This is ufually the forerunner of death.

The refpiration is very flow, when there are confiderable intervals between each infpiration. This fort of breathing denotes the weak ftate of the organs, and, in fevers, commonly precedes delirium. In hysterical affections, it is the ufual forerunner of fyncope.

The refpiration is faid to be laborious, when the infpiration feems to be performed with difficulty, as if the thorax were oppreffed by fome confiderable weight. This is constantly a fymptom of danger in fevers; becaufe, like the painful refpiration, it commonly indicates inflammation. The refpiration is not constantly and uniformly laborious, in chronic difeafes; becaufe this difficulty is liable to be excited by a variety of occasional caufes. We obferve this in afthmatic patients, where this fymptom difappears, and returns, at intervals, during a long courfe of years. The fame thing happens to hypochondriacal patients, from flatulent diftenfions of the lower belly; and in hysterical affections, we often fee the breathing become fo difficult, that the greateft efforts of the organs of refpiration, are fcarcely able to give it a free courfe. I have particularly

cularly noticed this extreme difficulty of breathing, in hysterical women, after acute fevers.

We should be cautious, not to mistake this difficulty of breathing, which occurs after inflammations of the breast, for a continuation of the inflammation. In these cases, the physician will do well, likewise, to attend less to the pulse than to the urine; because, in a state of inflammation, it is commonly high coloured; whereas, in this state, it is usually of a pale colour. Besides this, it will be right for him to attend to the frequent sighs, and depression of spirits, which usually occur in these cases; and, above all, he should be careful to observe, that when these cease, only for a moment, the respiration becomes easy; and this would not be the case, in continued inflammation.

I have occasionally seen a numbness and rigidity of the limbs take place, during a difficulty of breathing of this sort, which had been preceded by an extreme degree of anxiety.

The respiration is unequal and irregular, when the patient breathes differently, in different moments. This inequality is usually an unfavourable symptom; because it denotes the operation of different causes at once; whereas, an equal and uniform respiration seems to indicate only one obstacle, although it be a bad one. It is well known, that changes in the respiration, are to be considered as of great importance in diseases; especially when these changes are durable. They will be favourable, or

alarming, in proportion, as they approach to, or recede from, the easy, natural, and uninterrupted respiration of health.

A great and frequent respiration, in inflammatory diseases, was considered, by Boerhaave, as a symptom of approaching crisis. In delirium, the respiration is commonly rare and great.

The respiration is small and frequent, when the patient, from the pain he feels in breathing, draws in only a little air at a time. In the pleuretic stitch, the respiration is small and frequent, on this account. This frequency and smallness, denote the violence of the disease. In fainting, the respiration is small, but rare.

The respiration is very great and frequent, when only one lobe of the lungs is inflamed; so that the patient is still able to draw in a considerable quantity of air at a time. In acute fevers, the respiration sometimes becomes small and frequent; and this is an unfavourable sign, because it denotes how much the patient's strength is exhausted. It is likewise very alarming in hectic fever, because it commonly occurs in their last stage.

Previous to convulsions, or delirium, the respiration is observed to be very rare, but at the same time, very great. Prosper Alpinus, however, remarks, that this is not the case in every delirium, unless the patient complains, at the same time, of an oppression or pain of the breast, or of faintness. Still, however, it may be considered as indicating some
affection

affection of the brain; and therefore, lethargy and delirium, or some of the usual consequences of such an affection, may be expected.

The respiration is very slow and small, when nature is, as it were, exhausted. In these cases, the patient can hardly be perceived to breathe. Physicians of every age have agreed, that of all the unfavourable sorts of respiration, this is by far the most alarming. In fevers, it is a symptom that is decisively mortal. Hippocrates, Galen, and Alpinus, have all considered it as the forerunner of death. According to the latter of these, it denotes the vital powers to be totally exhausted; and, according to Boerhaave, that the more noble viscera are in a gangrenous state. To this rule, however, there are many, and not unfrequent exceptions. I myself have seen this sort of respiration occur in a patient, the moment he was recovering from a fainting fit, which had been so lasting, as to give the appearance of death. The standers-by really supposed him to be dead. The patient was a strong and healthy peasant, between thirty and forty years of age. This man had been imprisoned on account of some crime, and the fear of being hanged had thrown him into this state. All his faculties seemed to be annihilated. I could perceive no beating of the pulse, nor any motion of the heart or the breast, or the least marks of respiration. His eyes were closed, and his face and cheeks were perfectly colourless. His body was cold, and he had, in every respect, the appearance of a corpse. The people about him, moved him in every direction, and even rolled him on the floor; but all to no purpose; he gave no

sign of life. I applied the volatile spirit of sal ammoniac to his nostrils. This alone has sometimes restored drowned persons to life ; but in this patient it was of no use. I likewise attempted to pour something down his throat, but the liquor flowed back again, through his mouth. The whole of this scene was transacted publicly in our town-house, before a crowd of witnesses. He remained twenty-four hours in this state, and then I began to perceive the small and slow respiration, of which I have just now spoken. During the first four and twenty hours, I directed his nostrils to be constantly rubbed with the spirit of sal ammoniac. After this, he began to swallow a little. At the end of thirty hours, he opened his eyes for the first time ; and, six hours after this, began to utter a few words, with a very feeble voice. In six days, he was perfectly recovered.

The respiration is very elevated and laborious, when the abdomen, ribs, sternum, scapulæ, clavicles, and even the nostrils, are in considerable motion, although only a small quantity of air is taken into the lungs at a time. I have often compared the noise produced by a patient, who breathes in this manner, to a pump that is difficult of suction. This kind of respiration is, without exception, considered as a fatal symptom, because it indicates the greatest stricture of the thorax that is possible, and always an approaching suffocation. Prosper Alpinus observes, that we commonly meet with it in patients, who have an inflammation of the throat or the lungs ; or who are suffocated, as it were, by an
effusion

effusion of pus, from an abscess. I have not seen this sort of respiration constantly take place in pulmonary inflammation; but I once observed it, after the sudden disappearance of a swelling of the hands and feet. I had reason to suspect, that the patient had taken some medicines, without my knowledge, and that an abscess had formed within the lungs.

The rattling in the throat, which occasionally occurs in respiration, is owing either to inspissated mucus filling the bronchiæ, or to an effusion of serum into the cellular substance of the lungs. This effusion is the consequence of inflammation. The cause of the increase of inflammation, may be ascribed to the continual motion of the lungs, the degree of fever, and the neglect, or the improper use, of remedies. In cases of acute fever, inflammations of the breast, and abscess within the thorax, this rattling in the throat, is usually the forerunner of death. It sometimes takes place eight and forty hours before the patient expires. It is of shorter duration, when the inflammation terminates in gangrene. At the beginning of diseases, and particularly of asthma, this symptom is less frequent, and commonly less alarming. I have seen it take place, on the sixth day of peripneumony, and yet the disease has terminated favourably, on the tenth, by means of camphor. I have even observed it on the ninth and eleventh day, and yet the inflammation afterwards gave way to the vapour of vinegar.

In general I have observed, that the respiration may be the same in very different circumstances, and even of great diversity in the same circumstances.

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All this variety will depend on the difference of constitution, and the occasional causes; and these will always be attended to, by an inquisitive and sagacious observer. I have seen all the different kinds of respiration occur in very different diseases.—They are, therefore, not to be solely depended on, in the forming a prognostic, but are to be compared and combined with all the other signs, which occur in the disease.



C H A P. III.

Of Signs derived from the Urine in Diseases.

THE vulgar consider the urine as a glass, in which we are to see every thing that passes within the body. They, therefore, expect, that the physician, without attending to any of the other symptoms of a disease, should at once read its history in the urine; and likewise the constitution of the patient, at the same time. These prejudices are the more deeply rooted in the minds of ignorant people, because the wonderful is always the most agreeable to them. Paracelsus openly declared himself in favour of this imposition; and there have been other physicians, who have been knavish or ignorant enough, to indulge in reveries of this sort.

I have sometimes seen these urine casters inspect a patient's water, with such a mysterious air, that I could never have supposed any body capable of so much studied imposition in this way, had I not been an eye witness of it. Enlightened people, however, are no longer dupes to these impostors.

Women

Women are, in general, the most credulous in quackery. I knew one, who was reputed a woman of good sense; she was said to possess a particular talent in judging of the merit of physicians; in her vapourish fits, which she defined by an infinite number of names, she constantly sent her urine, and the remedies prescribed for her, to an urine caster, who lived at a considerable distance; and this man, after inspecting her water, sent word back, whether the medicines were proper for her or not.

The origin of this imposition is to be looked for, in the ignorance and barbarism of the middle ages, when the greater part of physicians were ecclesiastics, who either saw the patients in their churches, or were satisfied with inspecting their urine.

Daniel Le Clerc is of opinion, that the readiness of the vulgar to be deceived, is the great source of these impositions. That celebrated writer very sensibly observes, that they who feel themselves capable of gaining the esteem of reasonable patients, by their probity and talents, and, of course, refuse to prognosticate any thing in diseases, from the sole inspection of the urine, are very often abandoned in favour of some ignorant impostor, who sees, in the urinal, the history of a disease, of which he would have no idea, even at the bed-side. We often see persons, who, on other occasions, are deficient, neither in genius nor talents, are yet, in these matters, as credulous as the ignorant vulgar. It would seem as if these people renounce, at once, all their knowledge and good sense, and put themselves on a level with the multitude.

Not

Not long ago, a man of merit, after wavering for some time in his opinion concerning an impostor of this class, declared, at length, in his favour, and, from that instant, praised him in all companies. A waggish student happened to say to him, soon after this, that his new favourite was one of the cleverest fellows in the world, having predicted, from the urine of a cat, that there would be no more mice for a twelvemonth. Sorely piqued at this raillery, he returned home, and, preparing a mixture of urine, and tincture of saffron and chalk, sent it by his servant to the urine doctor, with a note to inform him, that it belonged to a person, who had been long sick, and who wished for his advice. The quack, who still has the reputation of being a very skilful physician, receives his fee, and sends back his opinion in writing, describing the nature of the disease, and the method of cure. The good man now saw and acknowledged the imposition; and, surely, his good sense ought to have led him to this before.

Le Clerc is not the only writer, who has attempted to destroy the influence of these impostors. Stahl has expressly written a treatise on the subject. Boerhaave observes, that a physician must surely be insane, who attempts to judge of diseases, by the urine alone. He himself has detected some of the tricks of the most reputed urine doctors; but these fellows were strangers to shame. Hoffmann was of the same way of thinking. "Sensible physicians", says he, in one part of his works, "have long smiled at these old womanish tales". Tissot observes, that physicians attend to the urine of patients, because the variations in this way, may throw

some light on the changes that happen to the other fluids; but that it proves the grossest ignorance, or most consummate knavery, to attempt to persuade the world, that, from an inspection of the urine, any man can discover the symptoms or the causes of a disease. We may affirm with certainty, adds this writer, that whosoever prescribes a remedy, after such an inspection alone, is an impostor; and that the patient, who takes it, is a mad-man. But let us pass on to other matters.

Some of the Greek physicians, who were fond of a subtilty of reasoning, have given us a great variety of distinctions in the urine, each of which, according to them, has its simplification. But we have long been convinced, that nature, in this respect, does not act in so determinate and uniform a manner. I will attempt, however, in a few words, to point out the different properties and appearances of the urine, which seem to merit the attention of the physician.

The urine is a portion of the watery fluid, which the chyle carries with it into the blood, and from which it is separated by the kidneys. This watery fluid brings with it, a certain portion of oil, together with saline and earthy particles. The oil and salts of the urine are, in greater quantity and more exalted, in fevers; and likewise after violent exercise. The earthy part of the urine, frequently attaches itself to the urinary passages, and occasions calculous concretions. Neither the oil nor the salts, are sensibly perceptible in the fœtus; both, however, are to be distinguished in the urine of children. As
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we advance in life, the urine becomes more impregnated with these principles:

Immediately after a meal, the urine is commonly clear. Five or six hours after this, it is of a much higher colour. In general, the urine will be found to vary according to the age, temperament, aliment, &c. In describing the urine, physicians generally attend to the quantity in which it is secreted; and likewise to its odour, taste, colour, fluidity, and contents.

In cold countries, the urine is secreted in considerable quantity; because the insensible perspiration is less. It is likewise very copious in diabetes, in hypochondriacal and hysterical patients, and, in general, whenever the insensible perspiration is diminished, or a diarrhœa suddenly suppressed: In hot countries, and in cases of dropsy, the urine is in little quantity. In acute fevers, and in diseases of the urinary passages, there is likewise but little urine secreted.

The taste and the smell of the urine, will always be dependent on the oil and the salts it contains. These, therefore, will prove to us, in some measure, the state of the fluids, or the length of time it has remained in the bladder. The urine is of a strong smell in acute fevers, on account of the heat with which they are attended, and of the smallness of the secretion. In eruptive fevers, in which the humours are commonly much depraved, the urine is sometimes foetid. It has been found so exceedingly foetid after a total suppression, as to occasion instant

death to the surgeon, who drew it off with a catheter. Boerhaave considered foetid urine in the beginning of diseases, as a very unfavourable sign, and tells us, it is very difficult to succeed in the cure of these cases, whether they be acute or chronic.

The same principles may be applied to the taste of the urine, if the cause only is attended to. When the urine has a strong odour, it will likewise have a strong taste. When it is high coloured, and at the same time insipid, Boerhaave supposes great danger, and that even death is not far off.

The colour of the urine may be white, pale, yellow, red, brown, green, and even black. Janus Plancus tells us, he once saw it of a blue colour: he describes it, as having deposited a blue sediment, and yielding an odour, not unlike that of sal ammoniac. On opening the bladder, there was no appearance of this blue colour to be discovered; so that many people in Germany have suspected, that Plancus's patient made use of a copper chamber-pot.

A white or a pale yellow coloured urine, in acute fevers, is considered as an unfavourable appearance, and more especially, if it had afforded a sediment previous to this. According to Galen, a white urine announces delirium, in fevers; and when it happens to a delirious patient, may be considered as announcing death. Boerhaave informs us, that the urine of patients, who die of acute fevers, is always colourless. I have had occasion, however, to observe, that in diseases attended with inflammation, when
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the urine became pale, there was commonly a change for the better, provided the other signs were good. This white or pale yellow urine, is by no means uncommon, even in persons of the best health. It is almost an invariable forerunner of hypochondriacal or hysterical affection. It likewise commonly accompanies these complaints; and as the patient begins to recover, the urine becomes more coloured. Sometimes, however, I have seen these complaints occur with a very high coloured urine, and such instances are by no means uncommon. The urine is likewise of a pale colour, in obstructions of the kidneys or liver. It was on this account, that Galen considered it as a very unfavourable sign in bilious complaints. In long continued diabetes, the urine is likewise colourless; but in this disease, it is commonly sweeter and more copious, than in hypochondriacal or hysterical subjects, and is accompanied with an incessant thirst, and with a weak quick pulse.

A saffron coloured urine is observed in bilious complaints, and particularly in jaundice. But it is not peculiar to these diseases; we see it in acute fevers of every kind, and the deepness of the tinge is commonly proportioned to the degree of fever. A reddish coloured urine is particularly observed in inflammatory fevers; and I have, in many cases, observed, that this redness has been greatest in those, who had been accustomed to drink the most wine, when in health. I have often remarked, that the urine of hard drinkers is of a deep red colour, even when they are in good health. In general, this deep coloured urine, is considered as a mark of great fever

fever in acute diseases ; because, in these cases, only a small quantity of urine is secreted, and this is a sufficient cause for its being of a high colour. Boerhaave tells us, that high coloured urine, in an acute fever, is a sign that it will be very dangerous, and of long duration ; and that it forebodes a very distant and dangerous crisis ; gangrene of the blood-vessels, especially those of the brain ; and death. To this he adds, that urine, of a deep blood colour, without cloud or sediment, is a still more indubitable sign, that the patient will die.

The urine sometimes appears of a brown colour, when it is really of a saffron tinge, and very turbid. With respect to a green coloured urine, we might be apt to think, that the ancients had seen it only in their imagination, from the theory they had formed of the bile, if Boerhaave, and since him, De Haen, had not noticed it. Boerhaave observes, that it indicates and announces all the symptoms, which are usually attendant on a dissolution of the atrabilis. The ancients have likewise described to us a black urine, which, they tell us, is of the same nature as the green coloured urine, and indicates the same phenomena, although it generally is more alarming. Galen relates the having seen this sort of urine in quartans, and in hypochondriacal complaints. The black coloured urine, which Prosper Alpini attributes to coagulated blood, occurs sometimes in women after miscarriages, or in cases of hemorrhoidal flux from the bladder. I have seen the urine of a lying-in woman, from being of a saffron colour, become in a very short time, of a black colour : this patient had a fever, from a suppression of the lochia.

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The ancients, in general, considered black coloured urine as a very dangerous sign, except in cases of melancholy.

The fluidity of the urine is likewise exceedingly variable. Sometimes, we find it extremely limpid; at other times, it is thick. When first voided, it will, perhaps, be limpid, and, after having been sometime at rest, will become thick, and *vice versa*. Some writers have pretended to observe different degrees of fluidity, according to the difference of colour; but these are arbitrary distinctions, which are every day contradicted by Experience.

A urine, which continues to be limpid after it is voided, indicates, in acute fevers, that we are not, as yet, to expect a crisis. It is on this account, that Hippocrates did not consider it as a good sign in fevers, although it was high coloured, or yellow. Boerhaave observes to us, that a limpid and colourless urine, in inflammatory fevers, indicates a morbid state of the viscera, delirium, convulsions, gangrene, and death.

When limpid urine becomes turbid soon after it is voided, we may argue, that nature is labouring to effect a crisis.

When a patient, at the beginning of acute diseases, had voided turbid urine, and it continued to remain so, the ancients supposed every thing to be in great perturbation within the system. When this happened in a more advanced stage of the disease, they concluded, that the crisis would be very
difficult.

difficult. They therefore noted it as a bad sign, because, at any rate, supposing the patient's strength be good, they considered it as presaging a disease of long duration; and death, if the patient's strength was unequal to the conflict.

Baglivi speaks of a patient, who laboured under some disease of the joints, and who voided a great quantity of turbid urine, which very soon became of a gelatinous consistence. The patient, soon after this, recovered. I have seen something of the same kind take place, in a similar disease,

The ancients considered it as a sign of crisis, when the urine, from being thick when first voided, soon became limpid. In acute fevers, Boerhaave says, it is a good sign, both of the present and future state of the disease, when the urine deposits, and this quickly, during the whole course of the fever, a white, inodorous, light, and uniform sediment. M. De Haen does not undertake to determine the time, at which this true critical sediment ought to be deposited, after the urine is voided. But he is of opinion, that the more speedily the deposition begins to take place, and the longer it lasts, the more perfect is the crisis. He remarks, however, that a sediment, precipitated ten or twelve hours after the discharge of the urine, has been the forerunner of a favourable crisis.

It may be laid down, perhaps, as a general observation, that the different degrees of fluidity in the urine, depends on the various combination of its constituent parts. The proportion of these, may be ascertained

ascertained by an easy experiment. Boerhaave tells us, that if the urine, after being agitated, long retains its scum, it proves the salts and the oil to be intimately combined together, and that the crisis will be difficult; but that the crisis will be much easier, if this scum is readily dissipated.

The constituent parts of the urine, either fall to the bottom of the vessel, or remain suspended in the water, or float at the top of it. Both the sediment and the scum, are of great variety in quantity and composition, and form, and colour. The Greeks have given to each of the different kinds of sediment, a particular denomination. However clear these denominations might be to them, they are to us extremely ambiguous. We may observe, however, that a purulent sediment is a mark of abscess, either in the urinary passages, or in the parts of generation. If the sediment is mucous, or gives the appearance of phlegm, it proves that some of the mucus of the bladder, is brought away with the urine; and this more especially, if the urine is pale and thin, and the sediment viscid and foetid. This likewise denotes the presence of calculus. The physician, however, should be attentive not to confound this mucous sediment, which so often occurs in stone patients, with any thing purulent, and so conclude, that an abscess exists either in the bladder or kidneys, even though the sediment be white, or of a greenish tinge. Friend relates the history of a fever, which terminated by an abscess of the bladder. The symptoms that accompanied it, were such as usually denote the presence of a stone. The patient died, and, on enquiry after death, there was

found to be a collection of matter between the bladder and rectum.

The sediment was considered very attentively by the ancients, and they drew from it many conclusions, in diseases. If it was thick and glutinous, they supposed a similar gluten to be prevalent in the fluids of the system, and *vice versa*.

With respect to the colour of the sediment, it may be white, pale, of a yellowish red, red, green, lead coloured, or black; of these, the white is considered as the best, when the parts, which compose it, keep well together, and appear somewhat pyramidal. This state of the sediment, has been considered as announcing every thing to be in readiness for a crisis. Even within our time, a crisis has been expected to be performed with difficulty, when the sediment, instead of being somewhat pyramidal, was perfectly level.

The pale coloured sediment is not supposed to differ materially from the white. The ancients considered the yellow and the green as unfavourable, in consequence of the imaginary notions they had of the bile. A little boy, whom I attended, and who was troubled with worms, voided a dark coloured urine, which deposited a copious sediment, of a deep yellow colour. The patient recovered, notwithstanding this. When the sediment was of a red, or yellowish red colour, the ancients concluded, that the morbid matter was not sufficiently prepared for a crisis. I have observed this sort of sediment in very different circumstances of acute fevers; having

having seen it, both in patients who were nearly recovered, and in patients who were dying. The ancients likewise considered the lead coloured sediment as dangerous.

Cloudy urine, in the opinion of the ancients, afforded but little hopes of a crisis: they gave the preference, however, to this, rather than clear urine, in the same manner as they preferred urine with sediment, to cloudy urine. Clear urine, was, by no means, pleasing to them: they inferred from it the approach of delirium, especially when the other signs were found to corroborate this opinion, and in this they acted prudently. A black, thick, irregular cloud, is a very bad sign, according to Hippocrates. Galen, however, does not think it so alarming as a black sediment.

The matter we see floating on the surface of the urine, is sometimes oily. We are not speaking here, of urine which has the colour and consistence of oil; but of urine, which affords a floating web-like appearance, of an oily nature, on its surface. When the ancients saw much of this oil on the urine, they considered it as a sign of consumption; and this opinion has its adherents, even in these times. A fat, robust lady, who was my patient some time ago, reproached me for not attending, sufficiently, to this appearance in her urine. Let us even suppose, that this phenomenon derives its source from the fat, as the ancients imagined, still, however, this does not constitute consumption, because in almost every disease the patient wastes.

We sometimes, in violent fevers, and above all in hectic patients, observe a pellicle on the urine, not unlike a spider's web. I was very seriously desired one day to attend to this appearance. Sometime before this, I had pronounced the patient to be consumptive. The pellicle, in this case, was extremely thin, slightly, and indeed almost imperceptibly, coloured. I have many times seen a similar appearance in the urine of healthy people, and have likewise remarked, that in the urine of many other consumptive patients, there were no traces of it to be perceived. Bonetus, so long ago as the last century, very properly remarked, that this pellicle was of no signification, because we meet with it in water, in which tartar has been boiled, and instead of melting on the approach of heat, as fat would do, it coagulates, and forms a saline crust. Baron Haller once saw drops of true oil, floating on the urine of a man, who had some defect in his kidneys.

I have now finished all that the plan of my work will permit me to say on the subject of the urine. It will be found to vary in the most healthy persons, according to the diversity of age, sex, temperament, climate and season, manner of living, and medicines that are employed. It will be, sometimes, found to have the same appearance in an acute fever, and in the scurvy; diseases, by the bye, that are very different from each other. It will, likewise, be found to be very different in different stages, even of the same disease. Sir John Pringle has very well observed, that the urine is a
 very

very uncertain sign in petechial fevers, because we see patients die, whose urine deposited a sediment, whilst others, without having any such sediment, recover.

Hippocrates, and others after him, have remarked, that a physician will be liable to err, who forms his prognostic solely from the urine, either in acute or chronic diseases; it being well known, that the urine varies in persons of the best health, and is liable to be affected by so many external causes, that it is impossible to derive from it any just opinion of the state of the person, who has voided it. Besides, we sometimes see the other signs afford the best hopes, whilst the urine has a most unfavorable appearance; and, in other cases, the best sort of urine is accompanied with the most fatal symptoms in other respects.

It, therefore, clearly follows from all this, that it will always be right and requisite, to unite the observation of all the other signs to that of the urine, when we wish to judge soundly of a disease, without being in danger of erring, and injuring, at once, the health of our patient, and our own reputation; and that we shall do well not to attend much to the urine, on which there is so little dependence, when we are able to distinguish, and judge of diseases, by the other signs.

The general signs of diseases, and of their crisis and termination, have, therefore, all of them something truly indeterminate in their signification; of these,

these, the respiration is, perhaps, the most uniform and certain, but this sign is not at our disposal as such in every disease. There is less certainty in the pulse, tho' we can avail ourselves of it in almost every disease. The urine may be said to be the least certain of the three, and can be useful to us, only in a very few diseases,



C H A P. IV.

Of the Signs to be derived from the different Appearances and Positions of the Body; and likewise, from the State of the Mind.

BY an attentive observation to the signs of diseases, we learn to distinguish those which are peculiar to each. These signs are, indeed, very numerous, but they admit of a precise determination; only in a small number of diseases, however numerous may be the effects of these diseases.

My plan will not allow me to treat of each of these signs, in their utmost extent; much less shall I be able to speak of them all. I will endeavour to bring my reader with me to the bed side of the sick, but not to every disease. To think myself obliged to shew him every particular case, would be to judge too unfavorably of his capacity.

The genius for observation aims at embracing, at once, all the phenomena, or rather, what may be called *the physiognomy* of a disease. This physiognomy

prognomy is to be collected from the whole external appearances of the body. The features of the patient come in for no small share on this occasion. The countenance alone, in many patients, will sufficiently indicate the disease. In acute fevers, chlorosis, jaundice, worm complaints, and furor uterinus, there is required but a very moderate talent for observation, to discover the disease in the countenance of the patient. The more it differs from the healthy countenance, the more danger does it announce in diseases. A man, who, with an inflamed countenance, looks at me with a wild and fierce air, instead of the peaceful and gentle mein he had just before, announces to me, that he is threatened with delirium. In one patient, however, who had an inflammation of the breast, I remember to have observed an extreme wildness, accompanied with a paleness of the countenance, the night before a crisis, altho' he was, at the same time, cold and almost insensible. The next day, he returned again to himself, and both his pulse and respiration clearly indicated a change for the better; these favourable appearances continued from the ninth to the twelfth day, when he drank imprudently of wine, and died.

A weak, timid countenance, with a hanging down, and paleness, of the lips, are considered as very unfavourable signs in acute diseases, because they indicate a great loss of strength. A very melancholy countenance, is a very bad sign, likewise, in these cases, unless the patient has a diarrhoea, or is wholly without sleep, or is in want of food. When the countenance suddenly changes for the worse,

worse, in acute diseases, we have every thing to fear. In inflammatory diseases, when the nose becomes sharp and pointed, the countenance of a saturnine complexion, and the lips of a blueish colour, we may conclude, that even gangrene has taken place. An attentive observer will see a manifest danger from the countenance of the patient, when nothing alarming appears, perhaps, from the other phenomena of the disease.

There are many things to consider in the eyes. Boerhaave was so attentive to this matter, that he examined the eyes of his patients through a lens, in order to see whether the blood circulated properly, through the capillary vessels. Hippocrates considered it as an unfavourable sign, when the patients avoided the light; when their tears flowed involuntary, or when their eyes were drawn aside by spasm, or when one eye appeared smaller than the other, or the white of the eye became red, or when the smaller arteries there, were of a blackish hue, or sunk in, or projected, too much. When the eye-lids, in sleeping, were not sufficiently closed to cover the white of the eye, Hippocrates considered it as a sign of death, unless the patient had a diarrhoea, or was accustomed to sleep in this manner when in health. A Dutch physician is of opinion, that we seldom see a patient sleep in this way, in an acute fever, without its terminating in death. To this, however, there are exceptions. I saw Baron Haller ill, with an acute fever, some years ago, and sleep in this manner. Happily for mankind, the Baron recovered.

Since that time, I have remarked the same phenomenon, in hysterical women, who have been attacked with acute fevers. It frequently happens in children without being followed by any bad consequences. Dr. Klockhof's rule is, therefore, not without exceptions (*u.*)

Cheyne insists, that the eyes should be carefully attended too in chronic diseases. When they appear thick and languid, and, above all, when the lachrymal gland is larger and harder than usual, he asserts, that we may venture, without hesitation, to assert, that the nerves of such a patient are in a relaxed state; and that, if the patient be a woman, she is subject to hysterical affection, that her natural functions are in some manner disordered, and that her mode of living is improper. I myself remember to have seen a very amiable lady, with a yellowish, semi-transparent swelling in the great angle of the eye, similar to the description given by Cheyne. This lady, tho' naturally of a lively disposition, was exceedingly subject to hysterical affection, and of weak health.

The physician will do well, likewise to examine the tongue. Baglivi considered this as an object of the greatest importance, in the observation of diseases. The other signs, says he, in one part of his works, often deceive us, this never does. It is on this account that he recommends it to us, never

(*u.*) The author here mentioned was a writer of considerable merit. His *Opuscula Medica* were published at Utrecht, in 1747, in 8vo.

inflammations of the breast, the matter spit up is sometimes streaked with blood. This and every other sort of expectoration is salutary, provided they relieve the pain ; without such an effect they are unfavourable ; and the more so, if they appear in an advanced stage of the disease. I have seldom seen pure blood expectorated in inflammations of the breast, without observing that the matter spit up, and which is at first thick, is a certain sign that the patient will do well, unless he commits some irregularity. Such an expectoration will probably be the means of saving the patient, although it comes on late in the disease, provided we endeavour to promote it by the vapour of vinegar ; by means of this remedy I have saved many patients. We sometimes, however, meet with patients, who, in an advanced stage of the disease, are either deficient in strength or inclination to spit. I have seen patients who obstinately refused to expectorate, though they were able to do it.

In the beginning, if the matter spit up, is thin and frothy, it proves the disease to be considerable. In a more advanced stage it is a sign of danger, and, at the height of the disease, indicates death. A total defect of expectoration is a very favorable sign, when we perceive by the decrease of all the symptoms, that an inflammation of the breast is likely to be dispersed on the third or fourth day. I have often effected this, by means of camphor.

The expectoration varies, both in its nature and signification, in chronic affections of the breast. In that sort of phthisis which follows a sudden suppression of the menses, I have seen at first a coagulated
blood

blood spit up; and soon after this, the expectoration was of phlegm mixed with a mere florid blood. The spitting, in these cases; gradually became purulent and foetid, and was constantly streaked with more or less blood. When the patient began to recover, the foetor gradually went off; but there almost constantly recurred a spitting of blood, at the return of each menstrual period, when the flux itself did not take place.

When an abscess forms in the breast, after pulmonary inflammation, the patient does not spit much at first, notwithstanding the frequency of his cough. He begins, however, to spit, long before he expectorates pus, and the matter he coughs up is frequently white, and inodorous, even till the approach of death. When the abscess bursts, and this is frequently the case, the matter spit up becomes so thick and tenacious that the patient can hardly cough it up. I have sometimes in such cases observed that patients bring up a kind of pellicle with the pus. The rupture of an abscess of this sort is sometimes accompanied with vomiting,

The pus is good when it is white, uniform, without foetor, and brought up without difficulty. It may be considered as bad, when it is of a green or yellow colour, and affords a disagreeable smell.

But there is another sort of expectoration, which seems to denote a particular sort of phthisis. The matter of this is a thick, viscid, insipid and inodorous phlegm, and spit up in considerable quantity. I saw an instance of this sort in a lady at Franckfort,

fort, about ten years ago, who became consumptive, after having long spit up a phlegm of this kind. I did not perceive that she had any fever. Huxham observes, that this sort of phthisis is as fatal as that which follows a vomica, and which manifests itself by a purulent expectoration.

Baglivi says, there is certainly an abscess of the lungs, when the patient coughs up little grains, which have a disagreeable smell, when pressed between the fingers. He does right, however, to add, that other signs are necessary. I have often seen people cough up grains of this sort, which, on being pressed between the fingers, yielded a very disagreeable smell, and yet, these persons were free from any complaints; we likewise see many persons, who, in apparent good health, spit up a dark blue coloured or black matter, which is attended with no symptom of illness. The follicles of the œsophagus sometimes yield a mucus, which is as dark coloured as ink. I once saw a patient who died of a mortification of the intestines, and who spit up a thick, viscid and dark coloured matter (x).

Diminution or loss of appetite, considered as a sign, is less significative in diseases, than it has hitherto been supposed to be. The appetite for eating diminishes in all acute diseases. Men

(x) The reader will be pleased to observe, that the word matter, here, and in other parts of the work, is not intended to mean pus, but as a term of general application, phlegm, mucus, &c.

naturally

naturally suppose themselves sick, when their appetite fails them, and very often eat, without appetite, and by force as it were, with the hopes of getting well. It is of real importance to see a sick man recover his appetite. This proves the intestines to be in a sound state, and there is never any true sign of recovery, after acute diseases, till this return of appetite does take place (y).

The appetite is soon lost in chronical diseases, because the stomach usually suffers in these; we sometimes see women, who are so extremely feeble, as to live, almost without food. In these patients, when the appetite mends, we may expect a change for the better.

Vomiting is common to many diseases, and, in several, it is a good sign. Vomiting is constantly preceded by nausea. This nausea leads us to suspect some foreign matter in the stomach, unless we have reason to presume some other cause of irritation. Vomiting is, therefore, useful, whenever the stomach is loaded with bile or phlegm. Docteur Pye saw a very dangerous and extraordinary vomiting, become

(y) I have heard a very celebrated anatomist, of this country, relate, with his usual pleasantry, in one of his lectures, that after a smart attack of fever, which had confined him during many days to his chamber, he felt this return of appetite, and a longing for something savory. He immediately sent out his servant to a cook's shop, who soon returned to him with a plate of ham, and another of cold beef. I very greedily devoured both, said the professor, and from that moment I dated my recovery.

truly

truly critical in the gout; the patient was about forty-two years of age, a sober man, accustomed to no disease but this. In March 1753, he was attacked by a very severe fit in both feet. The pain in his feet, heels and ancles, increased for about ten or twelve days, till at length he felt the most extreme agonies. In the height of this extremity, the pains (it is the patient's own expression) from the feet, heels and ancles, flew as quick as lightening to the calves of his legs; but remaining there not half a minute, and not in the least abating their violence, (though the feet, heels and ancles, were free from pain) from the calves, after a short stay of about half a minute, the pains ascended, with the same velocity as before, to both the thighs, at the same time leaving the calves of the legs free. From the thighs, in less than one minute, they arrived at the abdomen, and, after giving the patient one most severe twitch in the bowels, reached the stomach: Here the pains and the fit ended, on the patient's vomiting up about a pint and a half of a green watery liquor, but so extremely corrosive, that he compared it to the strongest mineral acid. Immediately after this discharge, he fell asleep, and, after sleeping about five hours, waked perfectly easy, and, in two days, walked about his business. In another fit, in February 1754, a similar crisis happened again. In both, a profuse sweat attended the patient every morning, of a very offensive odour; his linen was tinged as if with saffron, and his urine of almost as deep a red as claret. But the moment, the critical vomitings had taken place, the disease, and, of course, all its symptoms disappeared. At length nature relieved the patient, in another way. A large quantity of
chalk

chalk stones were extracted from the bottom of his left foot, and this, from time to time, for about three or four months. Sometime after this, he was attacked with fever, and, at length, with a fit of the gout, which continued, with violence, for about a week, with frequent retching and vomiting, but without bringing up more than the contents of the stomach. At this time, an uncommon itching at the bottom of the foot, from which the chalk stones had been extracted, tormented the patient for five or six hours; and from this part, there was soon afterwards discharged more than half a pint of a bloody serous matter, full of chalk stones, which proved as truly critical, as the vomitings had done in the former attacks. The patient, after this, continued in perfect health.

Vomiting is, occasionally a very alarming sign, both in itself, and from the nature of the matter brought up by it. It is exceedingly dangerous, for instance, when it proceeds from the irritations, excited by inflammation of the brain, or of any of the thoracic or abdominal viscera; or from spasm. I have sometimes seen vomiting a very dangerous sign, in pleurisy and peripneumony; and even mortal, when it appeared on the first day, and continued or increased after two or three bleedings. It frequently yields, however, to the first bleeding.

In petechial and eruptive fevers, vomiting is a dangerous sign; because, in these, it is often occasioned by the sudden disappearance of the eruption. In the opinion of Hippocrates, the matter vomited up is of an alarming nature, whenever it is either brown or black,

or foetid. In cases of true ileus, even the fœces are supposed to be vomited up. Baglivi attributes the vomiting of a dark brown matter to weakness, and says, it is a sign of death.

I had the care of a lady, sometime ago, of more than sixty years of age, who vomited up a considerable quantity of a blackish and very foetid matter, every five or six days. She was completely constipated. This complaint was of six weeks standing, when I first saw her. The vomiting was accompanied with excruciating pain of the stomach and abdomen. It continued, at first, five or six hours, and latterly even twelve hours successively. The remedies, I proposed, seemed to be salutary, as the patient grew better, resumed her usual gaiety and strength, and for some time continued in good health. I had reason to conclude, that an extreme artery of the intestines had been the proximate cause of this cruel disease. Sometime after this, the patient had a violent fit of the gout, and, on the seventh day from the attack, a return of the same vomiting as before. Another physician had the care of her, in this last illness, of which she died, and I never heard what were his sentiments of the case, or what method of cure he adopted.

Diarrhoea and costiveness will each of them have different significations, according to the diversity of circumstances, both in a healthy state and in diseases. Unfrequent and dry stools are always a better sign of health, than frequent and fluid stools. This was the reason, why Boerhaave remarked, that healthy people who complain of going too seldom to stool,
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and of voiding hard and dry fœces, complain without reason, because this proves the strength of their constitution; whereas, a man, who is constantly, as it were, on the close stool, must necessarily be of a weak and relaxed habit.

I knew two brothers in Lower Saxony, both of whom were men of worth; one of these had constantly hard stools, which gave him great uneasiness; and the other was equally miserable, because he had frequent watery stools. The friendship and affection of these two brothers, seemed to suffer, now and then, merely from this difference in their stools.

Costiveness is an unfavorable sign, in diseases which require an open belly, as in cases of colic, inflammations of the bowels and cholera morbus. I have observed, that several cases of insanity have been of long duration, when attended, in the beginning, with obstinate costiveness. A diarrhœa is very dangerous in inflammations of the breast, which are to be expected to terminate by expectoration. Trillez has observed, that a diarrhœa, in the beginning of pleurisy, is usually mortal; whereas it proves salutary, in a more advanced stage of the disease. This experienced writer does well to say this, because, in the beginning, a diarrhœa would be liable to check the expectoration; whereas in the more advanced stage of the disease, we may suppose the expectoration to be pretty well over. Baglivi would have done well to have made the same distinction. He asserts, in one part of his works, that all who have a diarrhœa in pleurisy, die. I have indeed always found it a dangerous symptom; especially

especially when it occurred on the seventh or eighth day of a pleurisy; although many of these patients did well. Copious diarrhoea is a very dangerous symptom, in a phthisis that owes its source to an abscess of the lungs.

The nature and the colour of the *scæces*, will likewise be found to afford many useful signs. I have already observed, that dry *scæces* are favorable; because these prove, that much of the juices have passed into circulation. Hippocrates, on the contrary, was of opinion, that *scæces* of a softish consistence, and lengthened out, were a favorable sign in diseases, especially if they were voided at about the same time, as in health, and were proportioned to the quantity of aliment taken in. He thought it desirable, however, that the *scæces* should be of a harder consistence towards the approach of a crisis; that they should assume a deep yellow colour, and not have too much *scætor*. He considered watery, white, pale, green, very red, frothy, and viscid stools, as unfavourable; and so he did, stools that were in very small quantity. But he looked on it as a very dangerous sign, when they were of a leaden or black colour, and, at the same time, greasy, and very *scætid*. He seems to have carried his exactitude, on this head, still farther, and this was probably the reason, why some of the wits of his time gave him the appellation of *σχαιτοφαγος*, as Aristophanes had before named Esculapius.

It will be right to determine the diseases, in which, the state of the excrements may be considered more especially as a sign. In the dysentery, viscid and
slimy

slimy stools prove, that some acid matter abrades the intestines, and detaches the mucus with which they are naturally moistened. Sometimes, this matter is so exceedingly corrosive, as to bring away even layers of the villous coat of the intestines. I have observed similar stools in hysterical women, who were reduced very low by diarrhœa. A man of sixty-three years of age, during twenty of which he had been subject to the hemorrhoids, felt, one day, a very painful flatulency, accompanied by a considerable oppression of the breast, cough, and a spitting of blood. The hemorrhoidal flux returned, and all these symptoms went off, on his voiding a great quantity of viscid, acid, and slimy matter, by stool.

I have often observed shining, jelly-like stools in children, who had obstructions of the mesenteric glands, and, of course, were consumptive. Excrements of this sort, usually denote a weakness of the nervous system, and an acrimony, resulting from bad digestion.

Black fœces in inflammations of the intestines are the signs of approaching death, if the patient complains no longer of pain. I have also observed excrements of this colour, to have been the usual sign of death in children, who have died of convulsions from worms.

On the subject of sweats, Hippocrates informs us, that these, which appear on the critical days, and relieve the fever, are the best. That they are good, when they are universal and give ease, and bad, when they do not produce this effect; but that the
worst

worst of all are the cold sweats, which are confined chiefly to the face; because, in an acute fever, they are the forerunner of death, and in diseases of less violence, announce considerable duration. In similar circumstances, when they are even universal, they afford the same prognostic. The sweat, which appears only about the neck, and in the form of millet seed, is bad; but that which appears in drops, and evaporates, is favorable.

In an inflammation of the intestines, which proved fatal on the fourth day, I observed, cold sweats on the first, second, and third day, sometimes about the head, and sometimes on the hands. These sweats were as cold as ice. The disease began with them, and I considered it from the beginning, as of a fatal tendency. The reader will recollect, that the admiral Wassenaer, was covered with a cold sweat the moment his œsophagus burst.

It has been remarked, in general, that the skin may be very dry till the very moment in which the crisis takes place, without the latter being the less favorable on that account: That a critical sweat, when in too great abundance, is dangerous; because, by depriving the patient of the strength necessary to carry him through the crisis, it prolongs the disease instead of removing it: and, that an exceedingly copious sweat, towards the close of acute diseases, is a sign of death; because, it denotes a great degree of weakness, and becoming cold, is in the generality of cases the last sweat.

Copious.

Copious sweats are an unfavorable sign in hectic fever, because they denote considerable weakness. In many cases, however, patients get the better of these sweats. Whilst I am writing, I have the care of a child, eight years old, whose first complaints may be traced to an eruption in his neck. This eruption disappeared during the course of a catarrhal fever, some months ago: since that time he has had an almost incessant and violent cough, attended with fever, and colliquative sweat. The profusion of these sweats wasted him exceedingly, and yet, at length, he began to recover his strength, and to be able to take exercise. This fever, and likewise his cough, which constantly grew worse, in moist weather, are now both of them considerably moderated.

The degree of sweat is not always an effect of a frequency of pulse. We often see patients covered with sweat, with the pulse only at 80; whilst in others, the skin will continue dry, although the pulse beats 130 strokes in a minute. Sometimes the most powerful sudorifics have been unable to raise a sweat; and the source of this defect has been looked for, in too great a rapidity of the circulation. Sanctorius has very judiciously traced the origin, progress, and event of diseases, by ascertaining the variation, in the weight of the body, from an increase or decrease of the insensible perspiration.

We often see hemorrhages take place in acute diseases; and they have no little claim to the attention of the physician. The blood, in these cases, commonly flows either from the nose, the mouth, or the uterus sometimes it has been seen to issue from
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the surface of the body. An hemorrhage happening during the first days of an acute fever, is regarded as a symptom of the disease, and denotes its violence. It may likewise be considered as critical, and of great importance, in such a case. In inflammatory fevers, hemorrhage, considered as a symptom, can never do harm, unless it be too abundant.

I once attended Baron Haller, in an attack of Erysipelas, during which, the surgeon took from him eight and forty ounces of blood. In the space of four and twenty hours, he lost five pounds more, by an hemorrhage at the nose, and yet he recovered the loss. I have since had occasion to see nearly the same thing happen in other patients.

An hemorrhage from the uterus, in acute diseases, is, in general, a good sign, whether it be symptomatical or critical. The physician, however, is not to place his dependence on this, and neglect other remedies. I have never seen a favorable crisis by an hemorrhage from the lungs. These hemorrhages have usually been rather symptomatical than critical. In cases of small pox, Sydenham considered, spitting of blood, and bloody urine, as fatal signs. Boerhaave has likewise placed bloody urine, in acute diseases, amongst the signs of death. A bloody urine, void of gravel, is sometimes a mark of hemorrhoidal flux from the bladder, unless the blood comes from the kidneys. A bloody urine, with gravel, usually denotes the presence of the stone in the bladder. In cases of dysentery, when we observe blood mixed with the excrements, we should be careful to oppose the inflammation by every means. When
the

the blood in this case flows pure, and without mixture we have reason to fear the worst consequences. Losses of blood, either at the nose or by stool, are very salutary in apoplexy. In malignant fevers, almost every kind of hemorrhage is unfavourable, because they all owe their source to the great dissolution of the blood:

Towards the close of the yellow fever, which is so frequent and fatal in America, the blood is sometimes so dissolved and attenuated, as to flow from the nose and mouth, and even from the pores of the body. It will easily be conceived how alarming this must be to the physician.

Physicians have derived many signs from the state of the blood, drawn off by phlebotomy. When it has afforded a thick coagulum, of a yellowish white colour, or *buff*, they have argued the presence of inflammation, and having observed that in favourable cases this buffy coat has diminished, or wholly disappeared on the third or fourth bleeding, they have considered it as a very unfavorable sign, when it continued or increased. It ought always, however, to be combined with the other signs of the disease.

Many objections have been made to this theory. Sydenham observes, that if the blood of a pleuritic patient flows not horizontally, but perpendicularly, there will be no appearance of buff, altho' the blood may be drawn off with the same quickness. He adds that he does not know the reason of this. Triller has seen an exception to Sydenham's observations, and so has Van Swieten. Both parties have proba-

bly related what they saw. As to myself, I have observed this buffy coat in inflammatory diseases only, when the opening was large, and when, of course, the blood flowed horizontally. Sometimes, however, the orifice may be large, altho' the blood may flow perpendicularly, when a little fat impedes the passage, or when the vein is opened laterally. When the orifice is small, the blood will be discharged in drops, and there will then be no buff. Mathematical physicians have explained this in their own way, by supposing, that the thicker part of the blood can flow out, only in proportion as the orifice is large, the thinner particles being supposed to be thrown out towards the sides of the vessels, while the thicker blood circulates in the center.

Werlhoff relates, that in a case of violent pleurisy, in which the right side was affected, he directed a vein to be opened in the left arm. The blood had a very healthy appearance, and was without buff, the orifice closing when about three ounces had been drawn off. He then directed a vein in the right arm to be opened, and the blood, taken from this, was very inflammatory. It would seem that this last opening was larger than the other, and that this occasioned the difference.

But there are other, and more considerable objections to be offered on this head. Dr. De Haen observed a great variety and uncertainty in the state of the blood, in these cases; and the rules, which have been founded on the appearance of buff, seemed to him to be no less uncertain. I feel all the weight
of

of his difficulties, because I have had occasion to make similar observations myself. Perhaps these variations are only exceptions to general rules; perhaps too none of these rules should be admitted, only as they agree with, and are corroborated by the other signs of a disease.

I have often seen a truly inflamed blood taken from very healthy subjects. These people had undoubtedly a predisposition to inflammation, as I had reason to conclude from other circumstances: but when there is no appearance of fever, no hardness in the pulse, nor any local pain, we cannot suppose any inflammation to be actually present. All these difficulties therefore teach us the necessity there is for collecting together all the other phenomena, and comparing them with this. (2)

It is of importance to observe the position and actions of a patient, Hippocrates considered it as a fatal sign, when the sick carried their hands to their forehead; or scratched with them, as it were, about the sheets or the wall. I have seen these signs, and particularly in patients who died delirious: I have likewise observed them in others who recovered.

(2) Dr. Z. was not aware of Mr. Hewson's experiments on the blood, when he wrote this work. That ingenious physiologist has very clearly ascertained the true nature of the buff; and a prudent physician, who knows the many accidental circumstances, which will vary this appearance in the blood, will be very cautious in drawing from it any indications of cure.

I had the care of a child, three years old, who had an almost incessant vomiting during ten days, with a pulse which intermitted at every third, fourth or fifth stroke; he slept almost constantly, had convulsive motions of his eyes, and grinding of the teeth; and, on the eleventh day, took medicines for the first time. His fingers were perpetually beating against each other, so that blood flowed from under the nails. All these motions are the signs of considerable fever, of approaching delirium, and consequently of danger. In this case, all these symptoms were the effects of worms.

The position of the patients, when in bed, is very often a striking indication of the internal state of the sick; and, therefore, claims the attention of the physician. The more irregular this posture is in inflammatory diseases, the greater may we suppose to be the internal anxiety, and, of course, the danger of the patient. Hippocrates has given us a very ample and accurate account of the different positions of the sick. The best of all is, that to which the patient is accustomed when in health. If he lies on his back, with his neck, and arms, and legs stretched out, the sign will be unfavorable; but it will be still worse if he lies on his belly, or draws his head down towards his feet. When I see a patient hang his legs out of bed, throw his arms from one side of the bed to the other, and uncovers his neck, I suppose him to feel considerable anxiety, and consider these as alarming appearances. It is a fatal sign when the patient sleeps with his mouth open, (unless he has been accustomed

accustomed to do so in health) and to bend and cross his legs, whilst he lies on his back.

I have, many times, seen all these signs, sometimes separately, in different patients, and sometimes altogether, in the same subject; and I have seldom been deceived in judging from them, of the anxiety and danger of the patient.

To see the patient draw his head down towards his feet, is a mark of great uneasiness in acute diseases; but I have found it a dangerous sign, neither in gouty and other painful diseases; nor in children, nor in silent, and hypochondriacal patients.

It is a very unfavorable sign to see the legs hanging out of bed. I have commonly seen this occur, towards the close of fatal inflammations of the breast, or at least in the delirium, which precedes death; a desire of getting out of bed, and sitting up, is likewise a sign of danger. I have observed this to happen in an ecclesiastic, who was attacked with a violent inflammation of the lungs, accompanied with great anxiety, but without any expectoration. The patient was even covered with cold sweats; he recovered, however, and I attributed his recovery to the use of camphor in strong doses. In other patients, I have seen this desire of getting up, the forerunner of death. I remember a middled aged man, who had passed almost his whole life, in a chair, either in reading, or drinking, or smoking. Towards the close of an inflammation of his breast he got out of bed, in opposition to my advice, walked about the chamber, and, a few hours after this, died.

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The different positions of a patient in a chronic disease, sometimes lead us to ascertain its genus and species. The posture particularly claims our attention in the beginning of hydrothorax, a disorder so very difficult to be known at first, that it has deceived, as Morgagni well observes, the most experienced physicians. The patient, on the first attack of this complaint, feels a little constraint in his breast, which he finds difficult to define, and which he neglects; because it does not much incommode him. As the disease advances, this constraint becomes a real anxiety, and the patient is unable to sleep in an horizontal posture, and still more so, with his head low. This same thing happens in a dropfy of the pericardium. This anxiety sometimes awakens him when in bed, and even when he sleeps in a sitting posture. This sign, however, though so much taken notice of in this, is common to other diseases, and patients have died even of hydrothorax, without having once exhibited the sign we are speaking of.

When the water in these cases, is in both cavities of the breast, the patient lies with equal inconvenience on either side. When there is water only on one side, they are able to lie on that side. I have likewise observed, that, in general, these patients, when out of bed, carry the spine of the back somewhat forwards.

They, who have an abscess in the lungs, are usually able to lie only on the side, in which the abscess is; because, its pressure on the mediastinum, and sound side, renders the respiration very difficult.

ficult. When a patient has an abscess in each lobe, he can lie on neither side; so that here we have a symptom, similar to what happens in hydrothorax; and hence it clearly appears, how necessary it will be to study the other symptoms and causes, if we wish to distinguish abscess, from dropsy, of the breast. The inquiry, however, will frequently be very difficult, because, an inflammation of the lungs may, as I have already observed, be followed by dropsy of the breast, and this dropsy, affording all the signs of abscess, may not be truly ascertained, till dissection proves it after death.

In acute diseases, those motions, which are preternatural, will afford much signification; such as the *subfultus tendinum*. These do, indeed, accompany disturbed sleep in healthy persons, and are almost indiscriminately met with, in little and violent degrees of sickness. They accompany different petechial fevers, the malignant small pox, retrocedent gout, and agitation of the mind; and afford nothing conclusive. Grinding of the teeth is likewise a convulsive motion. I often remark it in children, and I observe, that it accompanies their fevers, and more particularly their convulsive fevers.

A tremor of the lips is likewise of consequence, to be attended to in fevers, unless it be habitual. Boerhaave remarks of this, that in acute fevers it commonly precedes violent convulsions; and, in a very acute fever, a salutary vomiting on the third day, if any signs of crisis have been observed.

True

True convulsions in fevers, are more frequently observed in children, than in adults. I observe, in these cases, that they are frequently the signs of worms. It is well known, that they often precede the eruption of distinct small pox. In women, they denote in fevers, only hysterical affection, though they are always the marks of weakness. Duretus considers them as dangerous in these cases, but in general, they are rather alarming than dangerous. I have seen the most violent convulsions in a case of inflammatory sore throat in a man, who was of a fat and gross habit. These had been indicated by no symptoms previous to their attack. It was the appearance of a surgeon, who came in to bleed the patient, which first brought them on. He was bled, however, and the convulsions returned during the operation; but, in three days, the patient was cured. In a case of lethargy, which was the effect of general dropsy, I have seen eight attacks of epilepsy take place, in the same day, and yet the patient recovered. The case is fully related in the second volume of the Zurick transactions.

The writings of Hippocrates prove to us, that melancholy degenerates into epilepsy, and *vice versa*. According to Galen, convulsions succeeding delirium are fatal, and so says Duretus. I have, however, seen this happen, and yet the patient did well. I have even observed, that patients have passed from convulsions to delirium and *vice versa*, and after this recover. In an hospital, entrusted to my care, I had the treatment of a woman, during

ring four years, who used to be attacked, at the same time, with furor uterinus, and epilepsy (a).

The state of the patient's strength will afford some important lights in the practice of the physician. When I say, as I often do, to female patients, *you are weak*, I am told, perhaps, that they manage, however, to suckle their children. By natural strength, we ought rather to understand the order and action of the functions of the system, than of any movements dependent on the will. So that by the strength of a patient, we wish to imply the state and aptitude of the solids, to execute not only voluntary motion, but also the natural, and vital functions.

We may be enabled to foresee diseases, with some probability, by a studious attention to the natural strength of the patient. Hippocrates has told us, we have to fear from athletic health, because, as the body, from its constitution, is subject to incessant alteration, he who enjoys the highest degree of health, cannot change for the better. Persons of a weak, and delicate fibre, have the most to fear from putrid fevers, whilst those of a strong fibre,

(a) Dr. Mead observes, that the raving fits of mad people, which keep lunar periods, are generally accompanied with epileptic symptoms. This, he tells us, was attested to him, by the late learned Dr. Tyson, formerly physician to Bethlem hospital, who, upon that account, usually called such patients epileptic mad.

are the most exposed to danger in inflammatory fevers. We shall be the better able to ascertain the diseases, with which these different subjects are attacked, in proportion, as we are previously informed of this difference in their natural strength.

This attention to the strength of the patient, will likewise enable us to judge of the changes and crises of many diseases. If we observe, in inflammations of the breast, in which every thing seems preparing for expectoration, that the patients want strength enough to compleat the crisis, we naturally conclude, he will die; because, the amendment is only in appearances. If a man of a strong fibre is attacked with violent colic, and the pain increases, we have reason to fear it will terminate in gangrene. In general, we can judge how a disease will terminate, only by comparing the strength of the patient, with the strength of the disease.

It often happens, that the patient's strength seems depressed and lost, though, in reality, it is not. I have seen patients, who, merely from the effect of a foul stomach, suddenly became as languid, as they who are attacked with malignant fever. In these cases, I have prescribed a vomit, and the patient has as suddenly resumed his strength.

On these occasions, the strength of the patient is to be estimated from the preceding causes, and not from what the patient feels within himself. Dr. Tissot observes, that it is the constant effect of putrid matter in the intestines, to produce extraordinary weakness.

The people, in general, judge of the failure of strength, merely by the presence of disease. This is the reason, why, in acute diseases, they require strength to be given to the patient. To this mistaken and fatal notion, may be attributed every year, the death of an inconceivable number of people. They perceive that every one is weak, when he is sick; but they do not know, that during the increase of the disease, this is the sole cause of weakness, and that by the removal of this cause only, we can restore the patient to his strength.

The total failure of strength is often, though not always, a very dangerous sign. It is well known, that the different kinds of true scurvy are accompanied with great languor, and depression of the spirits. This weakness gradually increases to such a degree, that the patient faints on the least occasion, on the least motion, and sometimes even whilst he sits. These syncope are now and then fatal, unless the patients lie down immediately. This phenomenon is frequently observed in England, in scorbutic seamen, who have made long voyages.

There are cases, however, in which syncope is in no way dangerous. I have often seen considerable faintness, and even convulsions occur, after simply opening a vein. These usually cease, the moment the patient is placed in an horizontal posture. I have seen hysterical women reduced to such weakness, as to be unable to move three steps in their chamber, without being giddy, and seized with faintness, and even convulsed. I have seen others fall into syncope, in the midst of conversation, and

yet be perfectly well soon afterwards, as indeed they were, the moment before this happened.

The difference of temperament, will likewise deserve to be considered amongst the signs. This will often be found to have considerable influence, in diseases, and will therefore be of the greatest importance. By the word temperament, I mean, in general, that constitution of the body, according to which a man feels and judges of his complaint; because the feeling of a sick man, or rather, the ideas he has of his disease, are the sensible effects of temperament. It is from the way, therefore, in which a patient expresses his sentiments of his disease, that the temperament becomes a sign in it. The different complaints of different patients, in similar diseases, are, in general, the effects of a diversity of temperament. We see some, who are not in the least plaintive; others, who complain much, whilst some are violent, and even furious, in their expressions of pain or uneasiness. The physician should be aware, that all this variety may proceed from one and the same morbid cause, which will produce more or less sensible effects according to the difference of temperament. If, therefore, the same diseases appear to be different in different patients, we are to attribute this to the different sensation and idea they have of their complaints. In painful diseases, it is impossible to ascertain the degree of pain, without having a previous knowledge of the patient's temperament, from which we may be enabled to judge, whether he complains too much or too little.

I have

I have met with persons of very nice sentiments (which might, indeed, be considered as a source of trouble to them, throughout life) who, in the most violent attacks of the gout, did nothing more than bite the sheets, to conceal the violence of their pain. As a contrast to these, I have met with women, who compared the moderate pain, excited by a blister, to the fire of burning coals. The former of these might be considered as a species of philosophers; and the latter, as furies.

An hypochondriacal man, whose nerves are weakened and relaxed, will consider, perhaps the earth as a frightful desert. The moment he feels a transitory relief, the country around him, seems to be covered with flowers; he thinks that the sun shines out, and that the birds make the woods resound with their melody. A man can be said, to be truly in health, only when his reason presides over his imagination, and leads him to see things in their true light. In order, therefore, to acquire knowledge of diseases, it will be necessary to have a previous knowledge of the patient's temperament.

The state of the soul, considered as independent of the body, is likewise a very important sign in diseases, and a physician cannot attend to it too carefully. If it is a truth, that the temporal happiness of man, depends on the healthy state of their nerves; it is not less true, on the other hand, that the soul may be very peaceful and undisturbed, independent of the nerves, and that this state of the soul is of great consequence in diseases. The flattering hopes, I, now and then, derive from a moment

ment of cheerfulness in my patients, are not always vain. Every thing contributes to support the patient, even to the grave, when the mind has sufficient fortitude, not to give way to the sufferings of the body. This firmness is not impossible, although the passions frequently owe their source to the appetite of our senses; and although the body has, in many cases, an absolute power over the soul, yet, this power does not hold good in all. We are, indeed, ignorant of the means, by which the soul and the body act upon, and influence each other; because we know nothing of the laws of their union. We know, however, that on many occasions, the soul frees herself from this influence, and thus contributes, at least indirectly, to the happiness of the body. Experience proves to us, that the soul can remain placid and undisturbed, in the midst of the greatest sufferings. The philosophy of the stoics, was founded on this principle, which ought, certainly, also to be in nature. Tasse was so completely master of his body, that he seemed to lose all sensibility in his enthusiasm. Cardan, in the midst of the most painful attacks of the gout, sometimes raised himself so much above all bodily affections, as to be no longer sensible of pain, until his mind became more vacant, and then he surmounted his tortures again by fresh meditations (b).

Scarron

(b) Cardan himself, tells us in his writings, that when he felt no pain naturally, he would excite it, by biting his lips, and squeezing his fingers till he cried. He did this, he adds, to prevent

Scarron was inferior to Cardan, in strength of imagination, nor did he require it; because, the natural gaiety of his temper was so great, that he appeared to be insensible to the most violent torments of the gout; and his soul seemed to perform her functions independent of the body, and to remain, as it were, immoveable on the ruins of the machine she animated.

Every experienced physician knows, that diseases of the mind, will yield to no physical remedies, unless the soul concurs, at the same time, in relieving the patient. Patience, fortitude, and dignity of soul, do, indeed, too often, bow down under the violence of physical causes; but, I have often seen these virtues of the mind triumphant, in a weak machine, that has been worn out by physical ills. The more the soul of a patient seconds the endeavours of a physician, the greater will be his hopes of success. An intelligent and prudent physician, has often begun, and completed, cures, which seemed to be impossible. What I say here, is founded on every day's experience. If, therefore, there are diseases, in which the patience, the assiduity, and the indulgent attention of a physician, can so far influence the mind of a patient, as to contribute to his cure, may we not very justly conclude, that the dispositions of the soul, may be the occasional causes of changes

prevent a greater evil: for when he happened to be free from pain, he felt such violent sallies of the imagination, and impressions on his brain, as were more insupportable than any bodily pain.

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in the body. How these changes are affected will be always wrapt up in obscurity. We well know the effects of the different passions. The body is always more or less influenced by them. Dean Swift was of a meagre habit, whilst in his senses, and governed by ambition; but, the moment he became insane, he acquired more fat. What conclusions, however, can be drawn from this, and a thousand other phenomena of the same kind? That our passions affect us, and change us,—we can say nothing more with certainty. It is sufficient, however, to prove to us, that the passions and dispositions of the mind, having so great an influence on our health, it behoves the physician to aim at keeping both the mind and the passions of his patient in order; but not to seek for the causes, which may have disarranged them, because this would be to aim at impossibility.

We sometimes meet with persons of so lively a turn of mind, that they seem to consume themselves like a lamp; whilst others, who have less of this vivacity, employ themselves with great activity on a thousand trifles, and are borne away by impatience, anger, inconstancy, singularity, or by some other passions of little violence. These are, perhaps, tormented by imaginary difficulties, which agitate and fatigue them, and, at length, bring them to the grave.

A physician, who sees subjects of this cast torment themselves incessantly on groundless motives, which serve only to keep up their ill humour, and weaken their nerves, may be assured, they are exposed to
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one or other of the diseases we have mentioned, and perhaps to many more.

Continual uneasiness diminishes the energy of the nerves, and weakens the activity of the muscles, digestion, the circulation, the secretions and nutrition. These fretful, and uneasy subjects, are so easily affected, that the least complaint, the most trifling pain, or indisposition, is sufficient to overturn the whole animal economy, and to bring them, perhaps, into extreme danger: but, without being so, they will send for a physician at midnight, with as much haste, and eagerness, as if it was noon, and as if they had thirty diseases at once.

There are some persons, who are eccentric, merely from the defect of education. Accustomed, from their infancy, to do every thing their own way, they cannot suffer any opposition to their inclinations, in more advanced life; so that they would, perhaps, be in a state of spasm for a year together, if any one, during all that time, should take upon him to vex and contradict them. These sullen and fantastical people, are the patients, who are so ready to reproach physicians, with a thousand imaginary faults, and to exclaim, like idiots, against the best observations, and the most successful remedies and methods. Patients of this turn, seem, with a tone of authority, to command a physician to cure them, and are incapable of suffering, the most trifling contradiction. When they have been relieved, they often relapse again through their obstinacy, and ill temper. These people fall sick sooner, and continue to be so a longer time, and with more violence com-

monly than others. The endless conflict of their passions, every moment alarmed by the vanity that disturbs them, on the least increase of their pain, is a continued source of vexation to them; the cares and inquietude of their friends serve only to add to this; and to aim at consoling them or repeating their ills, would in their opinion, be designedly to add to their grief. In a situation like this, every thing is troubled and disturbed within them. The body is affected by the troubles of the mind, and the mind suffers from the indisposition of the body. The patient's situation, in these cases, is the more dangerous, because, in this confusion, it is difficult to distinguish the causes from the effects. The whole man is sick, and no one part is affected independent of the rest; the disease, however, will be likely to have serious consequences. If any accidental affection takes place, we may judge, from the preceding state of the patient, what will be the effect of this subsequent disorder.

Men would do well to accustom themselves to the patient support of pain. It is well known, what wonderful effects are produced by custom, both in the moral and physical man. It is the weakness of our will which constitutes our weakness. We are always strong enough to do, what we have a strong inclination to do. The term *virtue*, comes from a word signifying strength, *vis, vires, virtus*. Fortitude of mind is, therefore, the basis of each virtue, and virtue belongs to a being that is weak in his nature, and strong only in will and resolution. This is the reason why a sick man, who has lived in adversity, supports a disease infinitely better

better than one, who has lived all his days in ease and affluence. In prosperity we are so surrounded on every side, as to see and know ourselves only the moment we feel distress, or when we reach the verge of the grave, and the splendor of riches, is eclipsed by the solemn apparatus of death. It seldom happens, in these moments, that a man has time enough to perceive he was like other men before this. We often see people die from grief or despair, although their disorders, perhaps, would not have proved fatal, had they learnt to look forward on death, with a calm and philosophic eye. It is difficult to persuade these people, that the grave levels all distinctions. The more a man becomes vexed with his disease, the greater ascendancy will it be constantly found to gain. Fortitude of mind is, therefore, in every case of sickness, to be considered as a favorable sign. I fear less from the presence of death, than from fear and despair in these moments. Every man must die, but we ought surely to descend calmly into the grave. Loss of courage, and agitation of mind, will serve only to extinguish the lamp, perhaps, before its time; whereas, he, who meets death with intrepidity may, this once at least, triumph over him. We frequently see the eruption of petechiæ preceded by an extreme depression of spirits, which returns again the moment the eruption disappears, and very often continues even with the eruption, if the patient is kept too hot, or takes the heating medicines, which, it is to be lamented, are too often prescribed in these cases. I have sometimes observed, that these patients die suddenly, towards the close of petechial fevers, when any imaginary fear

gets possession of their mind. Dr. Stockar, a young Swiss physician, remarks, that when these patients wish for death, they generally recover, because, this proves them to have no fear of death.

I feel myself naturally inclined to say to myself, "*this patient will die,*" when I see a man, with an inflammatory fever, who is of an impatient, morose, and uneasy disposition; because, the event of these fevers depend much on the tranquility of the sick, and their readiness to assist nature. The greater part of acute and chronic diseases, are lengthened out by the impatience of the sick, and are often rendered fatal by the transports of their mind. These people reproach nature with ills, which they have drawn on themselves, merely by offending her.

Resignation is usually a favorable state in diseases. It is a mark of the tranquility of the soul, although it often announces the presence of death. But an experienced observer, will distinguish the tranquility of mind, which is accompanied with certain remains of strength. Nature, in such a case, has only the disease to cope with, and thus may be able to effect, some favorable change from resources, which, in the generality of cases, will be unknown to us, but of which the patient would probably be deprived, by agitation and anxiety of mind.

Death has, in my opinion, less terror in it, than the life of a man, who is incessantly figuring to himself the horrors of death. I have heard many people, in good health, talk of death, and I have seen
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many sick people die; in general, the people, who talked so much of death, died, as it were, through fear at the thoughts of it. There are many persons who fear death, because they have formed to themselves very false ideas of the justice of the Deity, whom they suppose to be cruel, and inexorable. But these ideas can arise only in narrow and mercenary minds, and not in the true worshippers of a Deity, who is mild and merciful. The less fear a reasonable man entertains of death, the more placid is he in his last moments.

There are some occasions, however, in which this tranquility of mind, is a very unfavorable sign. It has been remarked, that, in children, the powers of the soul increase, in proportion, as those of the body diminish, and that they are never more amiable than in their last illness.

It has been remarked, likewise, that the imagination is in a particular manner elevated on the approach of death. It has even happened, that patients have foretold the hour of their death, and, notwithstanding the hopes of the physician, have really died at that hour (c).

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(c) It may, and does, sometimes, happen, that persons, on the approach of death, have conceived a strong notion they shall die at a certain hour; and, amongst a great number of such cases, there may have been some few, in which, death has chanced to take place, nearly about the time fixed on. We may suppose too, that in these cases, the principle of life being feeble and nearly extinguished, this idea and expectation of death, at a certain

We observe in children, who are sick and in a dangerous situation, a very unusual compliance in every thing, together with a degree of knowledge, which is the fruit only of reflection and experience, and a genius and eloquence far above their years. All this is the forerunner of death. This elevation of the faculties of the mind, is likewise much greater in middle aged persons, than in those of more advanced life. It would seem as if nature carried these subjects, through all the periods of life, as it were, in a moment. I knew a person whose last disease was insanity. Some few hours before her death, her reason returned to her, she spoke in the most pathetic and sensible terms, and soon afterwards died.

Notwithstanding all these observations, however, the tranquility of the soul is, as I have before observed, a good sign in diseases. The elevation of the intellectual faculties, I have just now mentioned, is, in such cases, a forerunner of death; but this is very different from that dignity of soul peculiar to the stoics. The elevation of soul, we observe in dying people, is not derived from reflection and philosophy; and it affords a mild and placid effect, which is not seen in the other case.

certain day or hour, may be so strongly fixed in the imagination, as to co-operate with the feebleness of life, in producing death. And this is all we can suppose on the subject. Cardan did, indeed, die, at the age of 75 years, on the very day he had predicted; but it is well known he abstained from all sustenance, that he might not discredit his art.

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There are other cases than those we have mentioned, in which a tranquillity of soul is not a favorable sign. Aretæus has very judiciously remarked, that not only the passions occasion diseases, but that diseases frequently reverse the natural state of the mind. Thus, he observes, that dropical patients have a certain easiness of temper, and patience, which are not founded so much on the hopes of a cure, as on the nature of the disease. This great physician likewise remarks, that in cases of hæmoptœ, the patients do not lose their courage, although the disease is a very dangerous one; and he very properly attributes this tranquillity of mind to the insensibility of the lungs; because the least pain commonly excites a fear of death to a certain degree. I have often had occasion to make the same observation in phthical patients, who, with an abscess of the lungs, kept up their hopes till the last moment.

A sudden calm or tranquillity, in a disease accompanied with violent pains, which before disturbed the mind of the patient, announces death. Thus in inflammations of the intestines, a sudden cessation of the pain is a fatal sign.

A sudden return of reason after phrenzy, likewise announces death. In cases of melancholy, this return, sometimes, forebodes phrenzy. I attended a young lady, of a very acute and penetrating genius, who had experienced three or four attacks of insanity, before I saw her. Some years after this, she was perfectly well again; and her mind was as brilliant as ever. In this situation she became pregnant, was brought to bed, and was so weakened by her
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ing-in, as to be attacked with convulsions. Unfortunately for the patient, an ignorant practitioner, who was called, kept up these convulsions during a year, by prescribing frequent bleedings, purgatives, warm baths, and tea. When I was called to her, she was attacked every four or five days with the most frightful convulsions. She recovered, however, by means of my remedies, and, in the opinion of every body, was perfectly cured. She would, indeed, have been so, if I had possessed the art of curing the moral causes of diseases.

At the end of a year, she fell into a deep melancholy, occasioned by manifest causes. After this, she became wild and frantic, and then again returned to her state of melancholy. She fancied herself to be the vilest of all creatures, marked out from the rest of mankind by her crimes, and destined for eternal misery (*d*). In her less unhappy moments, she simply deemed herself an inhabitant of hell, but at other, and more melancholy times, she fancied herself surrounded with flames. The most disagreeable part of her opinions, was her obstinacy in

(*d*) Mr. Derham, in his *Physico Theology*, relates something like this of a Mrs. Honeywood, a Kentish lady, "who was a very pious woman, afflicted in her declining age with despair, in some measure; concerning which some divines once discoursing with her, she in a passion said, *She was as certainly damned as this glass is broken*, throwing a Venice glass against the ground, which she had in her hand. But the glass escaped breaking, as credible witnesses attested." *Phys. Theol.* page 178.

refusing to take any medicines. She passed her time almost wholly in prayer, and in conversation with some gloomy ecclesiastic. At length, after having continued in this state about a twelvemonth, her melancholy left her on a sudden. She discovered, that her principles, together with the consequences she had deduced from them, and the total change in her manner of living, had been the effects of a disturbed imagination. She laid down a very different plan of life, which was rational and agreeable to her situation. She seemed to have recovered all her penetration and knowledge; but now and then it was perceived, that she laughed in a manner not altogether natural. After passing three months in this manner, she relapsed again into the most horrible madness.

The particulars I have related in this chapter, will prove how extensive are the signs of diseases. I have collected only a small portion of them. The field of nature is too wide, and the human mind too limited, to comprehend, or even to perceive all the phenomena of this sort that present themselves;

C H A P. V.

Of the Influence of the Art of Observation on Experience.

TH E system of a disease is not to be attained, by the art of observation alone; because, we must necessarily see things as they really are, before we can be able to inquire why they are so. The knowledge of particular truths, leads to that of general truths, all of which flow from a chain of well connected observations. The knowledge of facts, enables us to establish certain axioms. A talent for observation may, therefore, be said to furnish us, with historical knowledge; and genius, with philosophical knowledge.

We attend to the symptoms of a disease, because, it is by these, we are enabled to discern the signs, to learn the series of effects, and to ascend, as it were, by these, to the unknown causes. We should never become acquainted with the hidden parts of nature, if the things which are submitted to our senses, did not inform us of those which are not. The moment we are acquainted with all the symptoms of a disease, we have only to compare these with each other,

to distinguish what is constant and uniform, from that which is not, and to combine together the more essential symptoms, in order to acquire a knowledge of the beginning, the progress, and the termination of the disease. A method, like this, will lead us, with the most certainty, to the different causes related in the following books of this work, and will enable us to pass, from these causes, to the various practical methods of palliating or curing diseases. If we take a general view of the different parts of knowledge, the most necessary to a physician, we shall be convinced, that the art of observation is a very important one.

Without a knowledge of the signs, the greater part of diseases would be to us so many impenetrable labyrinths. The nature of diseases is, very often, so enveloped and obscured by a variety of circumstances, in no way essential to it, that we are obliged to have recourse to circumstances, of the least importance in themselves; because, these, being compared with all that has preceded, accompanied, and followed the disease, will, on many occasions, afford us the most interesting lights. So great a number of diseases have been considered as incurable, only because, the signs of them have not been accurately distinguished and ascertained. This is the reason too, why compound diseases are so often misunderstood, and why one disease is frequently mistaken for another, and the method of cure, of course, reversed. The observation, and exact comparison, of every circumstance, and of every indication to be derived from them, become the only sure, and, at the same time, simple means of being

able to discern the character of the symptoms, and the signs. An accurate and faithful description of their beginning, progress, and termination, constitutes the history of the disease. Hippocrates, who attended to, and examined, every thing profoundly, and whose minuteness was never fruitless, noticed even the colour of the eyes, hair and skin, that none of the marks of temperament might escape him; and thus was he enabled to ascertain the diseases, to which his patients were predisposed, and to trace, in his usual happy manner, the present, the past, and the future.

The history of diseases seems, therefore, to constitute the essential part of a physician's knowledge. He ought to be informed of the way in which a disease will terminate, when left to itself, because, the business of the physician, being to imitate the operations of nature, he ought to be aware of the manner, in which she directs them. The true, and uniform type of a disease, can never be learned, if the course of nature is changed, by an improper regimen, or impeded by improper remedies. To learn the nature of a disease, all the circumstances of it should be studied, in the order and state in which nature herself presents them. The physician will do well to note, in every case, the apparent and real powers, and likewise the efforts, of nature, if all these can be perceived, with a certain degree of clearness. This will be an object of consequence, if he wishes to judge of the event of a disease. But he must be cautious, not to weaken, or disturb, or destroy these powers by any impediments. He should be careful likewise, not to multiply, or diversify the simple effect of a simple
cause.

cause, if he wishes to ascend from the one to the other. And yet, we often see simple, and steady effects, rendered complex, and undistinguishable, by the addition of a thousand circumstances, that are foreign to their ordinary causes; and thus the whole is confuted. The physician himself, or the assistants, frequently give rise to phenomena, that are not essential to the disease. The same thing may happen from other causes, such as the mode of treatment, the irregularity of the patients, passions of the mind, &c. Hence it is, that all observations drawn, with too much haste, or from cases improperly treated, are useless, and sometimes even dangerous; because, they do not offer to us nature such as she really is, but as she has been, mutilated, or imperfectly seen.

The real virtues of medicines will be equally unknown, if we are uninformed of what nature does, or can do, when left to herself, and how far her operations will be salutary or noxious. As every useless operation of nature, is constantly more or less prejudicial to the sick, hence it seems to be equally certain, that medicines, which do not produce some good effect, are, if they are of any activity, constantly more or less pernicious. We must, therefore, learn how to estimate the effects of remedies, if we wish to avoid an erroneous application of them, and to distinguish what share they may have, in the essential or accidental symptoms of a disease.

It would seem, as if it was the aim of Hippocrates, to lead us to his discoveries, and at the same time to delineate to us nature, by her most distinguishable features.

features. Thus, we seldom find him speaking of the medicines he employed in his epidemical diseases. He seems to aim wholly at following nature, with a view to know her, and to trace out to us the route she follows, when left to herself. This is, in good truth, the only way, by which we can learn the effects of medicines, and the share they have in the symptoms of a disease. He has been reproached with having given us the histories of diseases, which, for the most part, terminated fatally; but this surely, is to reproach him, for what ought to draw on him our admiration and praise. Hippocrates, who studied to inform himself of the true character of diseases, could not attain this knowledge with more certainty, than by observing, with the scrupulous attention he did, those, in which nature yielded to the superior power of the disease. This was the only way, in which he could discern the essential symptoms, and thus be enabled to generalize the principles of his art. But he did not confine himself to this alone. He observed how nature acted, when she was able to overcome the disease, and thus has pointed out to us, how we may best imitate her. Hippocrates was, no doubt, aware, that succeeding ages would discover means of assisting nature; which to him were unknown; but, in the mean time, he was willing to describe her to us with truth, and he has so perfectly succeeded, that we may always know her, by the features he has delineated. He has, in short, copied nature with so much accuracy, that had he never cured a patient, he would not have a less claim to the grateful esteem of posterity, for having shortened the way to observation, and for having enabled us to say, on many occasions, what will happen

pen in a disease, and how it will terminate. The greatest men in all ages, and even those of the ancients, who envied his reputation, have all of them done him justice on this head.

In general, the ancients were very sparing of remedies, they bled but seldom, and contented themselves, with prescribing a light and diluting regimen. In this way they were enabled to observe nature, because, they never disturbed her operations. Perhaps, they thought, as Rousseau does, that they could not distinctly see what ought to be done, and, on this account, were desirous of observing the true nature of the disease, before they ventured to prescribe for it. And in this they did right. No man can acquire true experience in physic, who has not a previous and exact knowledge of the history of diseases. This is really the basis of good practice. To attain this, the physician must observe each individual disease, and then learn to arrange, in the general history of diseases, the phenomena, in the order in which they present themselves in the generality of diseases. He will then do well to distinguish the beginning, the progress, and the termination, as they occur in the greater number of cases. The description of uncommon and irregular symptoms, should be reserved for the history of particular cases. But, both the one and the other, that is, the history both of general and individual diseases, can be only a relation of the effects; because, the causes can never be established, till these have been fully, and accurately, discussed. With respect to more general and extensive reflections, which relate to particular cases, to rules or axioms, or fundamental truths,
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and, in short, whatever is purely theoretical; all these should be reserved for the close of the history, when all the data have been delivered, which can enable us to derive luminous deductions from them. The more and the better the eyes have seen, the more, likewise, will the mind see.

Hippocrates considered the art of observation, as the most essential part of physic; and we all know or ought to know, how much justice he has done to this branch of medicinal knowledge. It has been remarked, that the treatment of diseases does not fill a tenth part of his works, all the rest of them being devoted to the history of diseases. The Greeks, who followed him, aimed equally at attaining an exact knowledge of the phenomena and signs of diseases. This led them to distinguish the causes, and indications of cure. Celsus observes, that all the physicians, after Hippocrates, had constantly adhered to what he had delivered on the signs of diseases, although they had introduced many new things. Cælius Aurelianus employed himself so much on the signs, that he very often has omitted to mention the other symptoms. Sometimes, we find him, from this knowledge alone, describing diseases with the greatest precision and truth. There are some writers, however, who have erred in this way.

Avicenna multiplied the signs of diseases, without reason. He has been too much imitated in this by some modern writers, from the facility with which we give way to the imagination. Physicians came to be less attached to the knowledge of the signs in diseases, when they no longer studied nature in herself,

self. This change took place on the appearance of Paracelsus and the chymists, who sought for the signs of diseases only in the urine, and who, pretending to cure diseases, without knowing them, thought less of adapting their medicines to particular circumstances, than of universal remedies. The mathematical physicians expected to find nature in their calculations, and in these they sought for her. The result of all their combinations, was an infinity of useless numbers, and idle speculations. They did not reflect, that they were calculating the motions of organized bodies; and that these bodies, having an intrinsic motion, it would be necessary to ascertain the cause of this motion, before it would be possible to determine its effects; they seem to have brought the same notions with them, to the study of the human body, as they would to an hydraulic machine. The causes of motion in living organized bodies, being an impenetrable enigma, even in the most uniform state of health; it is, surely, a mark of folly, to presume to ascertain the irregular movements of nature, by hypotheses, to which other hypotheses may be opposed.

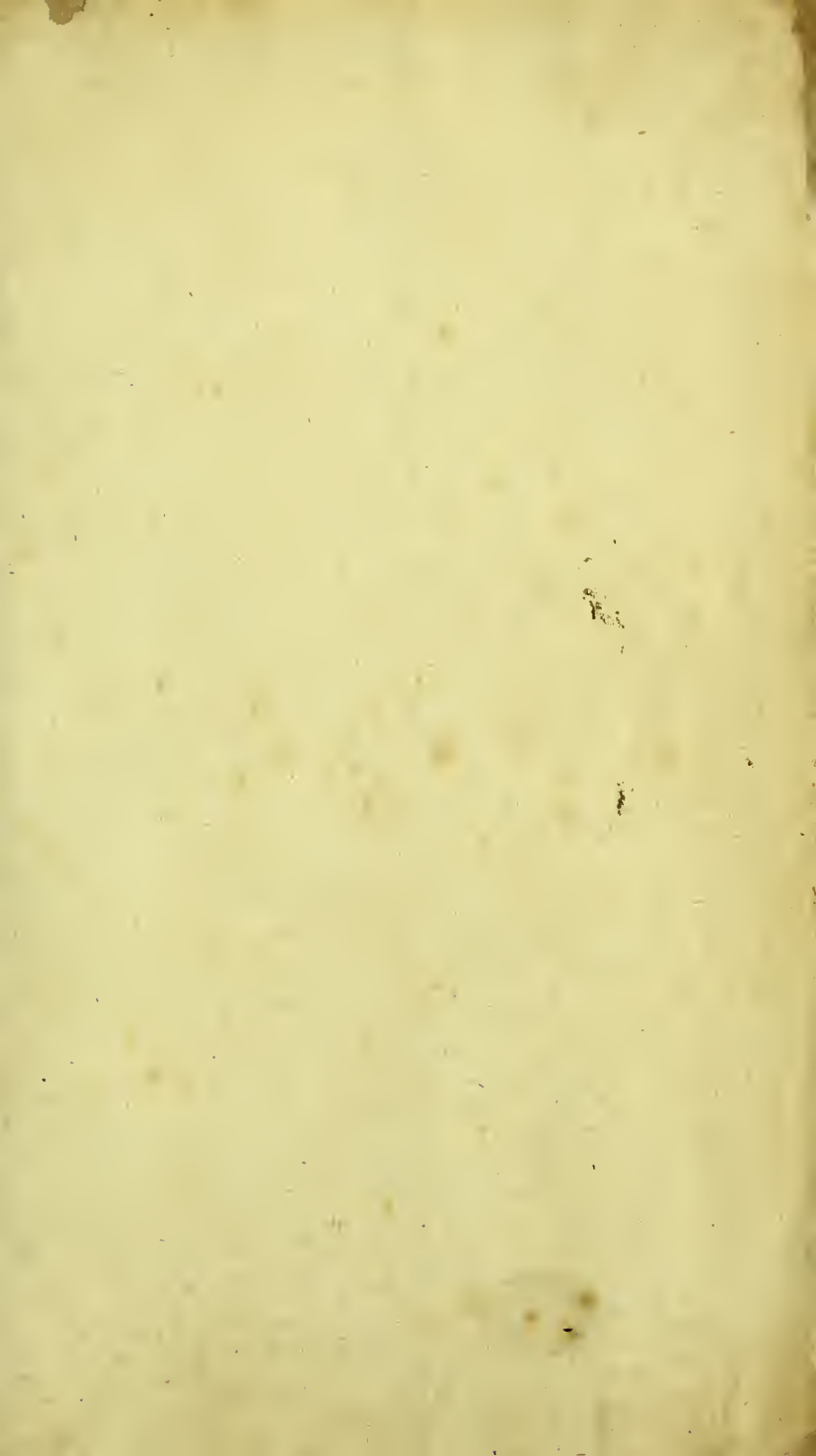
Sydenham, Baglivi, and Stahl, have the glory of having brought us back into the walks of nature. Many celebrated physicians of the Leyden school, have supported us in this way. We may say of these, what, in the opinion of a Chinese philosopher, is the most honorable of all compliments; "*Their century could not do without them.*"

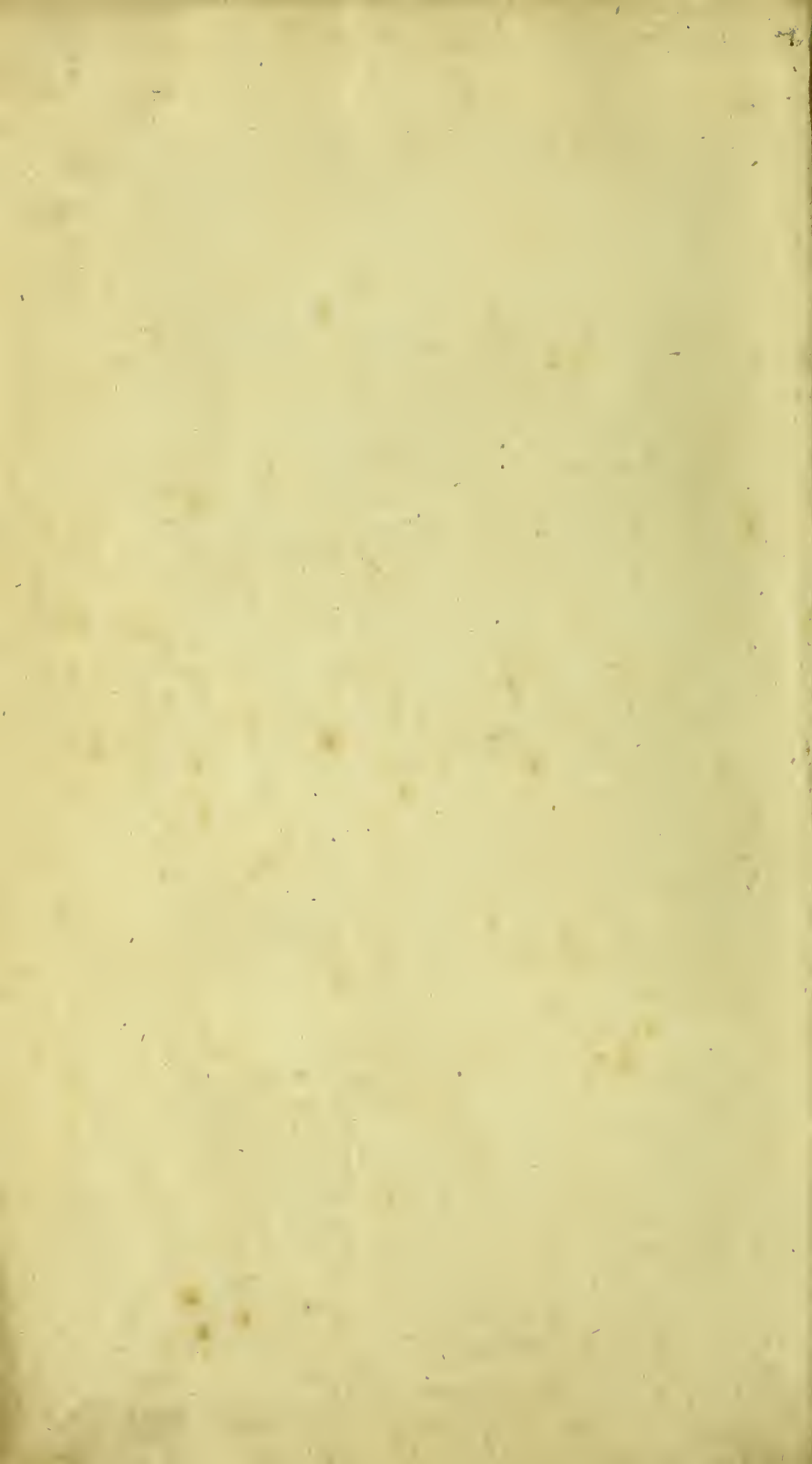
The art of observation is, therefore, with respect to experience, of the last importance, because, the

history of diseases, as we have before remarked, is the basis of medical knowledge. But a man may possess a talent for observation, without the faculty of reasoning, as he ought to do, on the phenomena. This talent for observation, must necessarily be combined with genius. By the former, a man will distinguish and arrange, what falls under the cognizance of his senses, whilst the latter, will enable him to perceive the chain of general truths. The one will give him a knowledge of facts; and the other of things. The talent for observation, in short, shews us, that which Hippocrates taught; and Genius, that which Galen aimed at teaching, and in which he would really have succeeded, had he lived in more enlightened times.

It is related of the sage Lockman, that being one day asked by Saadi, from what sources he had derived his knowledge; "*From the blind,*"—replied the philosopher,—"*who never place their feet, till they have tried the firmness of the soil: I observed, before I reasoned, and I reasoned before I wrote.*"

END OF VOLUME THE FIRST.





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